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Research Report 1474

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Establishing Priorities for Civilian Personnel Management Research in the Army

Sheldon B. Clark and Deborah H. Sweeney
Oak Ridge Associated Universities

Joel M. Savell
Army Research Institute

Leadership and Management Technical Area
Manpower and Personnel Research Laboratory

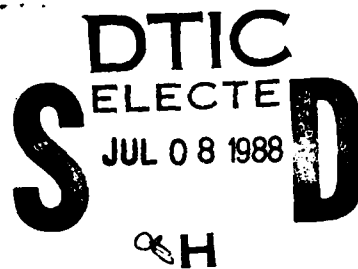


U. S. Army

Research Institute for the Behavioral and Social Sciences

April 1988

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Technical review by

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Sheldon B. Clark and Deborah H. Sweeney
Oak Ridge Associated Universities

Joel M. Savell
Army Research Institute

Leadership and Management Technical Area
Robert F. Holz, Chief

Manpower and Personnel Research Laboratory
Newell K. Eaton, Director

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

5001 Eisenhower Avenue, Alexandria, Virginia 22333-5600

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FOREWORD

Almost 40 percent of the Army's personnel resources are civilians. These 480,000 employees are an integral part of the Total Army team and contribute significantly to accomplishing the Army mission.

This research was part of the Civilian Personnel and Management task conducted by the Leadership and Management Technical Area (LMTA) of the Manpower and Personnel Research Laboratory (MPRL). The effort was supported by a Memorandum of Agreement entitled "Support for Army Civilian Personnel Research," dated 5 November 1986. The results of this research were briefed to the Chief, Directorate of Civilian Planning and Evaluation Office (DAPE-CPP), on 23 November 1987. These results provided input for the planning of a recently initiated major research effort that the Army Research Institute is conducting for the Directorate of Civilian Personnel.

Heretofore the possibility of improving the management of these civilian employees through the development of a comprehensive research program has received little attention. This report marks the second major activity aimed at designing and carrying out such a program.

The research priorities established in this report will assist policy makers and researchers alike in making informed judgments about the issues in civilian personnel management that should be addressed first.



EDGAR M. JOHNSON
Technical Director



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ESTABLISHING PRIORITIES FOR CIVILIAN PERSONNEL MANAGEMENT RESEARCH IN THE ARMY

EXECUTIVE SUMMARY

Requirement:

To design and implement a procedure for assigning priorities to previously identified research topics aimed at improving the management of the Army's civilian personnel.

Procedure:

Based on the results of an earlier effort (Army Strategic Plan for Civilian Personnel Management Research: A Roadmap for the Future), a questionnaire that contained 16 broad areas for possible research was designed. It was distributed to 104 key individuals throughout the Army. They were drawn from all major commands and represented military and civilian personnel, personnelists and managers, those with staff assignments and those in the field, and those who participated in the Roadmap study as well as those who did not. The survey participants were asked to rate each of the areas on three dimensions: (a) the value of improvement in the area, (b) the seriousness of the consequences of no improvement, and (c) the likelihood that additional information would be used.

Findings:

Based on the 81 responses received, priorities were determined for each of the 16 areas on four scales: Three scales used the rating dimensions in the questionnaire, and the fourth was an overall or composite scale calculated from the other three. The top priority topics (based on the composite scores) were related to retention, recruitment, and the identification and development of supervisors and managers. The lowest priority topics were related to mobilization issues, manpower forecasting, and organizational effectiveness.

Utilization of Findings:

The information in this report can be used to help decision makers determine the topics to investigate first. The ultimate value of this effort, therefore, cannot be gauged until these determinations have been made.

ESTABLISHING PRIORITIES FOR CIVILIAN PERSONNEL MANAGEMENT RESEARCH IN THE ARMY

CONTENTS

	Page
INTRODUCTION	1
METHOD	1
Survey Instrument	1
Survey Population	4
Survey Procedure	5
RESULTS	5
Follow-Up Interviews	5
Ranking of the 16 Topics	5
Comparisons With Other Data	9
Testing for Between-Group Differences	10
DISCUSSION	11
CONCLUSION	12
REFERENCES	13
APPENDIX A. PRIORITIZATION SURVEY	A-1
B. LIST OF SURVEY RESPONDENTS	B-1
C. TECHNICAL DETAILS OF PRIORITIZATION PROCESS	C-1

LIST OF TABLES

Table 1. Research areas included in prioritization survey	2
2. Primary questions asked in prioritization survey	3
3. Characteristics of survey participants	4
4. Detailed summary of prioritization results	6
5. Overall priorities in Army civilian personnel management research	8
C-1. Group comparisons of weighted composite scores: Managers versus personnelists	C-5

CONTENTS (Continued)

Page

LIST OF TABLES (Continued)

Table C-2.	Group comparisons of need-for-improvements scores: Managers versus personnelists	C-6
C-3.	Group comparisons of consequences-of-no-improvement scores: Managers versus personnelists	C-7
C-4.	Group comparisons of likelihood-of-action scores: Managers versus personnelists	C-8
C-5.	Group comparisons of weighted composite scores: Field versus staff assignments	C-9
C-6.	Group comparisons of need-for-improvement scores: Field versus staff assignments	C-10
C-7.	Group comparisons of consequences-of-no-improvement scores: Field versus staff assignments	C-11
C-8.	Group comparisons of likelihood-of-action scores: Field versus staff assignments	C-12
C-9.	Group comparisons of weighted composite scores: <u>Roadmap</u> participants versus nonparticipants	C-13
C-10.	Group comparisons of need-for-improvement scores: <u>Roadmap</u> participants versus nonparticipants	C-14
C-11.	Group comparisons of consequences-of-no-improvement scores: <u>Roadmap</u> participants versus nonparticipants	C-15
C-12.	Group comparisons of likelihood-of-action scores: <u>Roadmap</u> participants versus nonparticipants	C-16
C-13.	Group comparisons of weighted composite scores: Civilian versus military respondents	C-17
C-14.	Group comparisons of need-for-improvement scores: Civilian versus military respondents	C-18
C-15.	Group comparisons of consequences-of-no-improvement scores: Civilian versus military respondents	C-19
C-16.	Group comparisons of likelihood-of-action scores: Civilian versus military respondents	C-20
C-17.	Comparison of group response patterns on rating scales: Table of Kendall's Coefficients of Condordance	C-21

CONTENTS (Continued)

Page

LIST OF TABLES (Continued)

Table C-18.	Weighted composite scores: Aggregate summary statistics	C-22
C-19.	Need-for-improvement scores: Aggregate summary statistics	C-23
C-20.	Consequences-of-no-improvement scores: Aggregate summary statistics	C-24
C-21.	Likelihood-of-action scores: Aggregate summary statistics	C-25

LIST OF FIGURES

Figure 1.	Areas for which respondents felt systematic research efforts would make the greatest contribution to the Army	9
2.	Areas for which respondents felt systematic research efforts would make the least contribution to the Army	10
C-1.	Group comparisons of weighted composite scores: civilian versus military respondents	C-26
C-2.	Group comparisons of weighted composite scores: field versus staff assignments	C-28
C-3.	Group comparisons of weighted composite scores: managers versus personnelists	C-30
C-4.	Group comparisons of weighted composite scores: those who participated in <u>Roadmap</u> versus those who did not	C-32
C-5.	Mean z-scores for Prioritization Survey items: unweighted composite	C-34
C-6.	Mean z-scores for Prioritization Survey items: How valuable would it be to the Army to improve things in this area?	C-35
C-7.	Mean z-scores for Prioritization Survey items: How serious are the consequences for the Army of <u>not</u> improving things in this area?	C-36

CONTENTS (Continued)

Page

LIST OF FIGURES (Continued)

- Figure C-8. Mean z-scores for Prioritization Survey items: If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon? C-37
- C-9. Prioritization of research items: unweighted composite scores C-38

ESTABLISHING PRIORITIES FOR CIVILIAN PERSONNEL MANAGEMENT RESEARCH IN THE ARMY

INTRODUCTION

In 1985 the U.S. Army's Directorate of Civilian Personnel (DCP) initiated a long-term project aimed at improving the management of the Army's 480,000 civilian employees. Having determined that this improvement could best be accomplished through a comprehensive civilian personnel management research program, DCP negotiated a Memorandum of Agreement with the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to collaborate on this multi-year research program.

The first major task in this project was to focus the research and to identify specific research needs. To this end, a study was conducted for DCP by Caliber Associates in which key individuals throughout the Army were interviewed. This study produced the October 1986 document, *Army Strategic Plan for Civilian Personnel Management Research: A Roadmap for the Future*. The general areas of research need are identified in *Roadmap* as follows:

- Recruitment
- Retention
- Personnel development
- Organizational productivity
- Motivational productivity
- Military/civilian relations
- Civilian functions
- Future civilian work force needs

Roadmap also provided a useful framework for addressing these needs through a four-step process: (a) developing baseline measures, (b) analyzing the relevant issues, (c) identifying potential strategies for improvement, and (d) testing and evaluating the most promising strategies.

Because DCP wished not only to have the research conducted in a systematic manner but also to focus initially on the most important research topics, a procedure for assigning priorities to the research topics reported in the *Roadmap* had to be designed and implemented. The process used to assess the relative importance of these research topics, as perceived by key individuals throughout the Army, is described in the present document.¹

METHOD

Survey Instrument

Research areas to be prioritized. The major objectives and enabling objectives specified in the *Roadmap* for the Army's civilian personnel program, together with the specific research suggestions also presented in that document, served as the basis for the items included in the Prioritization Survey. Table 1 lists the resulting 16 items.

¹A secondary need was the gathering of information and articulation of additional considerations that might affect the decision of whether (or when) to initiate a given research effort. This second activity is reported in a companion document by Clark and Savell (in preparation).

Table 1

Research Areas Included in Prioritization Survey

Item code	Item specification
Q1	Attracting high quality candidates for Army jobs
Q2	Selecting candidates who have potential for high performance from the pool of qualified applicants
Q3	Making sure that candidates who are selected actually get hired
Q4	Retaining productive employees
Q5	Separating poorly performing employees
Q6	Dealing with the impact of mission changes on the work force
Q7	Assessing employee performance
Q8	Enhancing individual productivity
Q9	Identifying good candidates for supervisory and managerial positions
Q10	Developing supervisory, managerial, and leadership skills
Q11	Assessing the performance of supervisors and managers
Q12	Increasing the effectiveness, productivity, and image of civilian personnel offices
Q13	Building effective military/civilian relations
Q14	Developing strategies for improving organizational effectiveness
Q15	Determining appropriate functions for civilian employees in peacetime and during mobilization
Q16	Forecasting long-term requirements for the Army civilian work force

Prioritization questions. There are many possible perspectives for assessing the importance of one topic relative to another. The questions which survey participants were asked about each of the 16 topics on the Prioritization Survey are presented in Table 2 and represent three of these perspectives.² The first two exemplify essentially a benefit and cost assessment--the benefits of making improvements and the costs of not making improvements. The third question addresses the consideration of feasibility--the likelihood that changes which would supposedly result in improvement would actually be implemented.³

Table 2

Primary Questions Asked in Prioritization Survey

-
- How valuable would it be to the Army to improve things in this area?
 - How serious are the consequences for the Army of not improving things in this area?
 - If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?

Data analysis. There were four potential indicators of the relative priority of each of the 16 research areas--the three individual measures (questions) plus a composite (the simple sum of the three). The 48 responses of an individual (16 research areas with three questions on each area) were first standardized.⁴ The standardized responses were then summed across individuals for each of the four measures. Next, each of the four resulting scores for each research area were rank-ordered (from one to sixteen) across the research areas, based on their average scores.⁵

²See the section in Appendix C entitled "Development of Survey Instrument" for details on the review and validation of the Prioritization Survey. Appendix A contains a copy of the instrument itself.

³There are many reasons why an individual might feel that such changes would not be implemented. For example, the changes might be judged too costly (in terms of dollars or efficiency), or there might simply be an inertia in certain Army practices and procedures which make any change unlikely.

⁴This technique helps to control for the tendency of some individuals to respond positively to most questions and others to respond negatively to most questions.

⁵See the section of Appendix C entitled "Construction and Use of Scales" for further information on the procedures used.

Survey Population

Because this investigation was intended to focus on key individuals and opinion leaders throughout the Army, it was necessary for DCP and the Special Advisory Group to identify the appropriate survey population for the prioritization activity.⁶ Drawn from all major commands in the Army, these identified individuals represent personnelists and managers alike, uniformed and civilian personnel, those with staff assignments and those in the field, and those who participated in *Roadmap* and those who did not. Of the 104 individuals who comprised the population, 81 returned questionnaires, a response rate of about 78 percent.⁷ Table 3 summarizes the characteristics of the final survey population and the identifiable respondents.⁸

Table 3

Characteristics of Survey Participants

	Number of surveys:		Percent
	sent out	returned	returned
Total	104	81	78%
Civilian	65	47	72
Military	39	28	72
Field*	61	46	75
Staff*	41	27	66
Manager	73	54	74
Personnelist	31	21	68
<i>Roadmap</i> Nonparticipant	60	48	80
<i>Roadmap</i> Participant	44	27	61
Not Identified	--	6	--

*Two individuals are employed outside of the Army.

⁶Members of the Special Advisory Group are the same individuals who served as members of the Study Advisory Group during the *Roadmap* study and are identified in Appendix B.

⁷A list of the identifiable respondents (six individuals returned questionnaires without indicating their names) appears in Appendix B.

⁸The section in Appendix C entitled "Survey Respondents" has more details about who constituted the final survey population.

Survey Procedure

Survey materials were distributed to targeted participants either by mail or by courier. A cover letter, signed by Raymond J. Sumser, Director of Civilian Personnel, requested their cooperation in completing the questionnaire and returning it within a month. Respondents were asked to indicate their willingness to participate in a telephone follow-up interview by including their telephone numbers along with the identification material requested. After the return date had passed, DCP and ARI called nonrespondents to ask them to send in their questionnaires.⁹ A series of follow-up interviews were conducted by telephone with a representative sample of respondents to confirm that they understood the questionnaire items as intended and to provide an opportunity for making additional comments about the survey in particular and about civilian personnel management research in general.

RESULTS

Follow-Up Interviews

Sixteen telephone follow-up interviews were completed.¹⁰ The contacted individuals represented all groups of interest--those based in the United States and overseas, personnelists and managers, uniformed and civilian, staff and field, and *Roadmap* participants and nonparticipants.

Ranking of the 16 Topics

Table 4 summarizes the results of the prioritization process, showing the rank order (from 1 to 16) of each topic on each of the four scales. Because the composite score represents an overall assessment of each item, the rank of each item on the composite scale was judged to be of primary interest.

As a matter of convenience, the 16 topics were grouped into three distinct subsets (i.e., with statistically reliable differences) on the basis of overall composite scores.¹¹ Table 5 presents the full text of the grouped items in priority order.

⁹See the section in Appendix C entitled "Survey Schedule" for further information.

¹⁰See the sections in Appendix C entitled "Development of Survey Instrument: Validation" and "Follow-Up Interviews" for more details about these interviews. Appendix C-1 contains the text of the interview itself.

¹¹The section in Appendix C entitled "Analyses of Combined Groups: Grouping of Items" contains details about the statistical technique used to group the items.

Table 4

Detailed Summary of Prioritization Results

Item code	Item specification	Rank			
		Need for improvement	Consequences of no improvement	Likelihood of action	Unweighted composite
Q1	Attracting high quality candidates for Army jobs	1	1	7	2
Q2	Selecting candidates who have potential for high performance from the pool of qualified applicants	8	9	6	7
Q3	Making sure that candidates who are selected actually get hired	16	16	4	14
Q4	Retaining productive employees	2	2	1	1
Q5	Separating poorly performing employees	4	4	16	6
Q6	Dealing with the impact of mission changes on the work force	12	12	11	12
Q7	Assessing employee performance	11	13	5	11
Q8	Enhancing individual productivity	6	6	8	5
Q9	Identifying good candidates for supervisory and managerial positions	5	3	2	3
Q10	Developing supervisory, managerial, and leadership skills	3	5	3	4
Q11	Assessing the performance of supervisors and managers	7	7	10	8

Table 4 (continued)

Item code	Item specification	Rank			
		Need for improvement	Consequences of no improvement	Likelihood of action	Unweighted composite
Q12	Increasing the effectiveness, productivity, and image of civilian personnel offices	9	10	12	9
Q13	Building effective military/civilian relations	10	8	13	10
Q14	Developing strategies for improving organizational effectiveness	15	15	15	16
Q15	Determining appropriate functions for civilian employees in peacetime and during mobilization	14	11	9	13
Q16	Forecasting long-term requirements for the Army civilian work force	13	14	14	15

Note. Areas with highest priority ratings have the smallest numerical ranks.

Table 5

Overall Priorities in Army Civilian Personnel Management Research

TOP PRIORITY TOPICS

- Q4 Retaining productive employees
- Q1 Attracting high quality candidates for Army jobs
- Q9 Identifying good candidates for supervisory and managerial positions
- Q10 Developing supervisory, managerial, and leadership skills

MIDDLE PRIORITY TOPICS

- Q8 Enhancing individual productivity
- Q5 Separating poorly performing employees
- Q2 Selecting candidates who have potential for high performance from the pool of qualified applicants
- Q11 Assessing the performance of supervisors and managers
- Q12 Increasing the effectiveness, productivity, and image of civilian personnel offices
- Q13 Building effective military/civilian relations
- Q7 Assessing employee performance

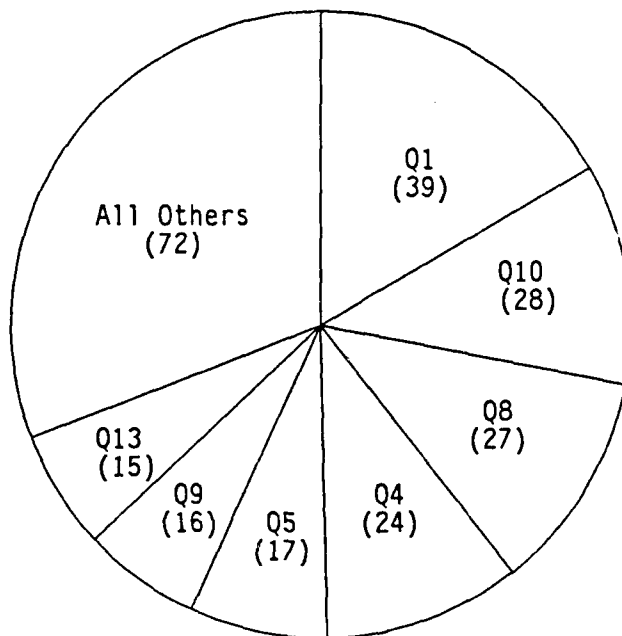
LOWEST PRIORITY TOPICS

- Q6 Dealing with the impact of mission changes on the work force
- Q15 Determining appropriate functions for civilian employees in peacetime and during mobilization
- Q3 Making sure that candidates who are selected actually get hired
- Q16 Forecasting long-term requirements for the Army civilian work force
- Q14 Developing strategies for improving organizational effectiveness

Note. Priorities are based on unweighted composite scores.

Comparisons With Other Data

In Section 2 of the Prioritization Survey, participants were asked to identify the three areas in which a systematic research effort would make the greatest contribution to the Army and the one area in which such an effort would make the least contribution. Figure 1 shows the frequency with which certain items were selected as the most promising areas, and Figure 2 presents the frequency with which some items were chosen as the least beneficial areas.



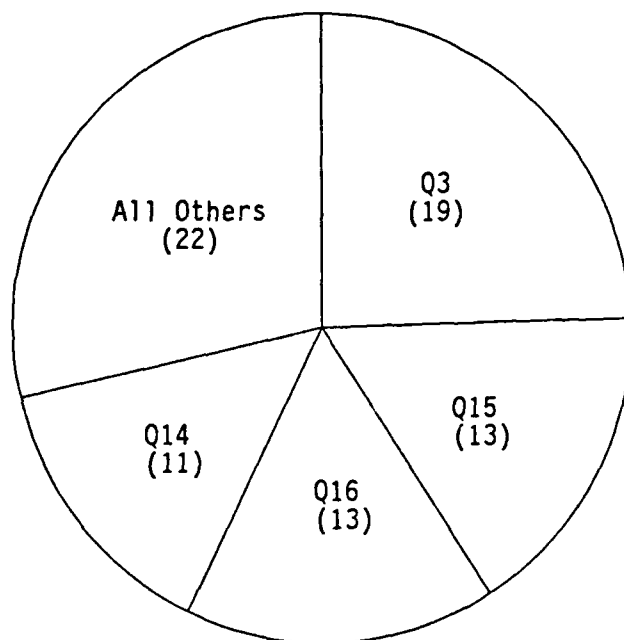
Notes.

This figure includes all three of those areas identified by respondents as benefitting most from systematic research efforts.

Figures in parentheses indicate the number of times a particular area was listed in the top three.

See Table 1 for specification of research areas.

Figure 1. Areas for which respondents felt systematic research efforts would make the greatest contribution to the Army.



Notes.

See Table 1 for specification of research areas.

Figures in parentheses indicate the number of times a particular area was listed.

Figure 2. Areas for which respondents felt systematic research efforts would make the least contribution to the Army.

Testing for Between-Group Differences

Given the diverse nature of the survey respondents, one of the first issues to be addressed in the data analysis was whether or not the various groups (i.e., military versus civilian, staff versus field, personnelist versus manager, and *Roadmap* participant versus nonparticipant) differed in their responses. If one group differed systematically from another in its perceptions, then group membership would become a factor in assessing priorities. Although the calculated scores for these groups did in fact differ on almost every item and every scale, these differences were too small to be statistically reliable.¹²

¹²See the section in Appendix C entitled "Investigation of Group Differences" for details of the statistical comparisons.

DISCUSSION

The telephone follow-up interviews did not identify any glaring inconsistencies in the intent of the wording of the questionnaire and the respondents' understanding of it. The third item, "Making sure that candidates who are selected actually get hired," seemed to be a possible source of confusion for some respondents, however.¹³ This finding is not prominent enough to warrant excluding this item from consideration, but results associated with the third item should be interpreted with caution. Since there was an indication that at least some respondents did not differentiate this issue from selection (Q2) or recruitment (Q1), one might argue that Q3 would be more appropriately placed in the top or middle priority groups.

It is interesting to note the tendency of survey participants as a whole to respond similarly for each item on the two benefit/cost dimensions (i.e., need-for-improvement and consequences-of-no-improvement) and strikingly different on the third dimension (i.e., likelihood-of-action).¹⁴ This is particularly true for items Q1 (recruitment), Q3 (hiring selected candidate), Q5 (separation), and Q7 (performance assessment). There are many possible explanations for these differences. For example, in the cases of Q3 and Q7, respondents may judge the underlying problems to be relatively minor, while they perceive that the Army policies and procedures that relate to them can be changed without too much difficulty.¹⁵ In the cases of Q1 and Q5, perhaps the underlying problem is of great importance to the Army, but many of the relevant constraints exist outside the Army (e.g., in the Federal Civil Service Personnel System) and are, therefore, difficult to change.

The relative rank order of the items most often mentioned as making the greatest contribution to the Army (see Figure 1) does not correspond exactly with those in Table 5, but the pattern of results is not inconsistent. Likewise, the four areas picked by survey participants as offering the least contribution to the Army (see Figure 2) are among the bottom items in Table 5. This evidence seems to support the validity of the computed composite scores and resultant rankings.

¹³This view is supported somewhat by other evidence as well. See the section of Appendix C entitled "Follow-Up Interviews: Interview Results" for further details.

¹⁴See Table 4. Figures C-6, C-7, and C-8 in Appendix C illustrate these patterns graphically.

¹⁵The reader should remember too that there is some doubt about the consistency of the interpretation given to Q3.

CONCLUSION

To assess Army-wide priorities for research to improve the management of Army civilian personnel is an important first step in deciding which research topics are ultimately the most important. The prioritization results presented here may be legitimate (perhaps even primary) considerations affecting decisions about whether (and when) to initiate one research activity rather than another, but they are by no means the only factor that must be taken into account. The companion document to this report by Clark and Savell (in preparation) suggests some of these other factors.

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Caliber Associates. (1986, October). *Army strategic plan for civilian personnel management research: a roadmap for the future* (Contract No. 903-85-C-0369). Washington, DC: Office of the Deputy Chief of Staff for Personnel, Directorate of Civilian Personnel.

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APPENDIX A
PRIORITIZATON SURVEY

PRIORITIZATION SURVEY

JUNE 1987

DIRECTORATE OF CIVILIAN PERSONNEL
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR PERSONNEL
DEPARTMENT OF THE ARMY

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ARMY CIVILIAN PERSONNEL RESEARCH/STUDIES PRIORITIZATION SURVEY

SECTION 1

INSTRUCTIONS: Listed below are 16 Army civilian personnel functions/areas that might benefit from study and/or research. Please (a) look over the list, (b) think about each function/area in the context of your total experience in the Army, and (c) answer the three questions by circling the number that corresponds to your opinion. (See Rating Scale box for response alternatives.)

Rating Scale

1 = Not at All ? = No opinion
2 = Not Very NN = Additional
3 = Moderately information
4 = Extremely is not needed

	How valuable would it be to the Army to improve things in this area?	How serious are the consequences for the Army of NOT improving things in this area?	If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?
1. Attracting high quality candidates for Army jobs	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
2. Selecting candidates who have potential for high performance from the pool of qualified applicants	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
3. Making sure that candidates who are selected actually get hired	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
4. Retaining productive employees	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
5. Separating poorly performing employees	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
6. Dealing with the impact of mission changes on the work force	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
7. Assessing employee performance	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
8. Enhancing individual productivity	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
9. Identifying good candidates for supervisory and managerial positions	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN

ARMY CIVILIAN PERSONNEL RESEARCH/STUDIES PRIORITIZATION SURVEY

SECTION 1 (Continued)

Rating Scale	
1 = Not at All	? = No opinion
2 = Not Very	NN = Additional
3 = Moderately	information
4 = Extremely	is <u>not</u> needed

	How valuable would it be to the Army to improve things in this area?	How serious are the consequences for the Army of NOT improving things in this area?	If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?
10. Developing supervisory, managerial, and leadership skills	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
11. Assessing the performance of supervisors and managers	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
12. Increasing the effectiveness, productivity, and image of civilian personnel offices	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
13. Building effective military/civilian relations	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
14. Developing strategies for improving organi- zational effectiveness	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
15. Determining appropriate functions for civilian employees in peacetime and during mobilization	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN
16. Forecasting long-term requirements for the Army civilian work force	1 2 3 4 ?	1 2 3 4 ?	1 2 3 4 ? NN

ARMY CIVILIAN PERSONNEL RESEARCH/STUDIES PRIORITIZATION SURVEY

SECTION 2

Now look back over the 16 functions/areas in Section 1 and think about the kinds of improvements that systematic research bearing on them might be able to provide. All things considered, in which three of these functions/areas would a systematic research effort make the greatest contribution to the Army? In the spaces below write in the numbers corresponding to these functions/areas.

GREATEST CONTRIBUTION _____
SECOND GREATEST CONTRIBUTION _____
THIRD GREATEST CONTRIBUTION _____

In which of the 16 functions/areas would a systematic research effort make the least contribution?

LEAST CONTRIBUTION _____

Besides the 16 functions/areas listed in Section 1, are there any other major civilian personnel functions that you feel would benefit from research efforts? If so, please explain below.

ARMY CIVILIAN PERSONNEL RESEARCH/STUDIES PRIORITIZATION SURVEY

TRANSMITTAL SHEET

Please provide the following information so that we can check your name off the list of individuals surveyed. Having this information will enable us to make sure that the responses received represent a sufficiently broad range of Army opinion. *(Please print).*

Name: _____

Position: _____

Installation: _____

We would also like to telephone a few respondents to provide an opportunity for them to voice their opinion on these issues in a more unstructured way. If you are willing to answer some additional questions by phone, please write in your telephone number below (we may not be able to call everyone who volunteers).

Telephone Number: _____

When you have completed the questionnaire, please return this sheet and the other materials to:

Labor and Policy Studies Program
Oak Ridge Associated Universities
P.O. Box 117
Oak Ridge, Tennessee 37831-0117

ATTN: Clark

Thank you for your cooperation!

APPENDIX B
LIST OF SURVEY RESPONDENTS*

Acton, Ms. Marie**	Deputy for Management and Analysis HQ, U.S. Army Materiel Command Alexandria, VA
Adams, CW2 David C.	Personnel Officer 379th Personnel Service Company Heidelberg, W. Germany
Arndt, BG Terrence L.	Deputy Chief of Staff for Resource Management HQ, U.S. Army Material Command Alexandria, VA
Bagnal, LTG Charles W.	Commanding General, U.S. Army Western Command Fort Shafter, HI
Barnett, Lowell H.	Director, Product Assurance and Test Division U.S. Army Tank-Automotive Command Warren, MI
Baughn, Ms. Brenda K.	Supervisory Management Analyst Fort Sill, OK
Baxter, Carl	Management Analyst, Plans & Analysis Division Office of the Inspector General HQDA Pentagon
Blount, David***	Supervisory Management Analyst, Manpower Programs and Budget Branch Office of the Deputy Chief of Staff for Personnel HQDA Pentagon
Bonessa, Barbara L.	Chief, Proponency Office Office of the Assistant Secretary of the Army (Financial Management) HQDA Pentagon
Borneman, COL Frederick H.	Deputy Community Commander, 26th Support Group HQ, U.S. Army Europe & 7th Army Heidelberg, W. Germany
Bostak, Ronald J.	Director, Nuclear Survivability Program Office Harry Diamond Laboratories Adelphi, MD
Bradley, Franklin M.	Civilian Personnel Officer Aberdeen Proving Ground, MD
Brannen, R. Warren	Chief, Operations Branch Supply and Services Division, Directorate of Logistics Fort Stewart, GA

Brown, COL Henry T., Jr.	Director of Engineering and Housing Fort Carson, CO
Bunker, BG Robert M.**	Director of Management Office of the Chief of Staff of the Army HQDA Pentagon
Busbee, COL Walter	Commander, McAlester Army Ammunition Plant McAlester, OK
Bushong, COL James T.	Staff Director, Civilian Personnel Modernization Project HQDA Pentagon
Caldwell, LTC William	Chief, Organization, Research, & Systems Analysis Office HQ, U.S. Army Europe & 7th Army Heidelberg, W. Germany
Cameron, Dr. Louis M.	Director of Research and Technology Office of the Assistant Secretary (Research, Development, & Acquisition) HQDA Pentagon
Carlson, Joseph S.	Field Representative, U.S. Army Civilian Personnel Center San Francisco Field Office San Francisco, CA
Cipolla, Frank P.	Director, Personnel Management Force Management and Personnel Office of the Secretary of Defense Pentagon
Cribbins, Joseph T.	Special Assistant to the Deputy Chief of Staff for Logistics HQDA Pentagon
Croall, Stephen T.	Director, Manpower Requirements U.S. Army Manpower Requirements and Documentation Agency Fort Belvoir, VA
Doctor, LTG Henry, Jr.	The Inspector General HQDA Pentagon
Dubicki, Dr. Henry J.	Office of the Assistant Secretary (Research, Development, & Acquisition) Deputy for Procurement Policy (Acquisition) HQDA Pentagon

Eckelbarger, MG D. E.	Director of Human Resources Development Office of the Deputy Chief of Staff for Personnel HQDA Pentagon
Fowler, Dr. Calvin M.	Chief, Manpower Policy and Standards Office Manpower, Budget, and Force Integration Directorate HQDA Pentagon
Fraim, William S.	Civilian Personnel Director U.S. Army Forces Command Fort McPherson, GA
Grimmett, Archie D.***	Acting Deputy Chief of Staff for Personnel HQ, U.S. Army Materiel Command Alexandria, VA
Hatch, MG H. J.	Director, Civil Works HQ, U.S. Army Corps of Engineers Washington, D.C.
Heiberg, LTG E. R., III	Chief of Engineers HQ, U.S. Army Corps of Engineers Washington, D.C.
Hines, BG Charles A.	Director, Office of Personnel Management U.S. Army Military Personnel Center Alexandria, VA
Houston, James R.	Chief, Coastal Engineering Research Center U.S. Army Engineers Waterway Experiment Station Vicksburg, MS
Husson, Richard D.	Deputy Director of Maintenance HQ, U.S. Army Armament, Munitions, and Chemical Command Rock Island, IL
Jones, C. Casy	Assistant Deputy Chief of Staff for Engineering HQ, U.S. Army Europe & 7th Army Heidelberg, W. Germany
Joyce, MG Robert M.	Commanding General, U.S. Army Community and Family Support Center Alexandria, VA
Kiper, Jack E.	Chief, Construction-Operations Division Ohio River Engineer Division U.S. Army Corps of Engineers Cincinnati, OH
Kirkwood, Gregory H.	Director of Logistics Fort Sill, OK

Klugh, MG James R.	Deputy Chief of Staff for Personnel HQ, U.S. Army Materiel Command Alexandria, VA
Langston, Ms. Joann***	Director, Study Program Management Office Office of the Chief of Staff of the Army HQDA Pentagon
Lorenz, Ms. Susan K.	Deputy Chief of Staff for Information Management U.S. Army Information Systems Command Fort Huachuca, AZ
Loschialpo, R.	Personnel Director HQ, U.S. Army Corps of Engineers Washington, D.C.
McCarthy, COL William J.	Executive Officer, Deputy Chief of Staff for Personnel HQDA Pentagon
McClain, Frank W.	Civilian Executive Assistant Red River Army Depot Texarkana, TX
McGinn, Ms. Gail H.	Director, Program Analysis and Evaluation Office U.S. Army Community and Family Support Center Alexandria, VA
Mergner, COL George F.	Assistant Chief of Staff for Resource Management HQ, Eighth U.S. Army Korea
Michael, Raymond V.	ADCS for Personnel, Administration, & Logistics (Civilian Personnel) HQ, U.S. Army Training and Doctrine Command Fort Monroe, VA
Morris, Kenneth C.	Deputy Director of Civilian Personnel HQ, U.S. Army Materiel Command Alexandria, VA
Newman, Peter	Personnel Management Specialist U.S. Army Western Command Fort Shafter, HI
Otis, GEN Glenn K.	Commander-in-Chief U.S. Army in Europe Heidelberg, W. Germany
Purdum, Gary**	Deputy Director, Manpower, Budget, & Force Integration Office of the Deputy Chief of Staff for Personnel HQDA Pentagon

Purvis, Gerald T.	Chief, National Resources Branch Construction and Operations Division South Atlantic Division, U.S. Army Corps of Engineers Atlanta, GA
Ragan, David W.	Deputy Chief, Shops Division Anniston Army Depot Anniston, AL
Reno, BG William H.	Deputy Chief of Staff for Resource Management HQ, U.S. Army Training and Doctrine Command Fort Monroe, VA
Ressler, Alton C.	Assistant Deputy Chief of Staff for Personnel HQ, U.S. Army Intelligence and Security Command Arlington, VA
Richards, D. Scott	Personnel Officer Fort Stewart, GA
Richardson, Ms. Lois L.	Chief, Claims Collection Division U.S. Army Finance & Accounting Center Fort Ben Harrison, IN
Rodgers, LTG Thurman D.	Assistant Chief of Staff for Information Management HQDA Pentagon
Rosenblum, Arthur P.	Special Assistant, Information Systems Office of the Assistant Secretary of the Army (Financial Management) HQDA Pentagon
Scott, COL Eugene F.	Garrison Commander Fort Stewart, GA
Shackelford, LTC John S.	Director of Contracting Fort Ord, CA
Shepard, Earl A.	Director of Resource Management U.S. Army White Sands Missile Range White Sands, NM
Shields, Dr. Joyce L.	Vice President, Hay Systems, Inc. Washington, D.C.
Stein, Peter	Deputy Administrative Assistant Office of the Secretary of the Army HQDA Pentagon
Suess, LTC Robert K.	Executive Officer Yuma Proving Ground Yuma, AZ

Temple, LTG Herbert R., Jr.	Chief, National Guard Bureau HQDA Pentagon
Thomas, Robert K.	Deputy Assistant Chief of Staff for Resource Mgmt. HQ, Eighth U.S. Army Korea
Vollrath, COL Frederick E.	Deputy Commander, 1st Personnel Command U.S. Army Europe & 7th Army Heidelberg, W. Germany
Wainwright, Ms. Toni B.	Supervisory Personnel Management Specialist Directorate of Civilian Personnel HQDA Fort Monroe, VA
Ward, MG William F., Jr.	Chief, Army Reserve HQDA Pentagon
West, Dr. Harry M. III**	Deputy Comptroller of the Army HQDA Pentagon
Wharton, LTC William D., Jr.	PDIP POC Personnel Readiness and Mobilization Office HQDA Pentagon
Wilkerson, William M.	Assistant Deputy Chief of Staff for Resource Mgmt. HQ, U.S. Army Forces Command Fort McPherson, GA
Yasi, Charles A.	Deputy Commander, Contracting Command HQ, U.S. Army Europe & 7th Army Heidelberg, W. Germany
Yurkoski, Anna E.	Chief, Employment and Classification Office Office of the Deputy Chief of Staff for Personnel HQDA Pentagon

* Does not include 6 respondents who failed to identify themselves.

** Along with Dr. Kent Eaton, Director, Manpower and Personnel Research Laboratory, U.S. Army Research Institute, and Andrew F. Foreman, Chief, Civilian Personnel Division, HQ, U.S. Army Europe and Seventh Army, served as member of the project's Special Advisory Group, chaired by Raymond J. Sumser, Director of Civilian Personnel.

*** Along with Dr. Joel M. Savell, U.S. Army Research Institute, and Arthur Walker, Deputy Director of the Army Budget, Office of the Comptroller of the Army, served as alternate member of the project's Special Advisory Group.

APPENDIX C

TECHNICAL DETAILS OF PRIORITIZATION PROCESS

Development of Survey Instrument

Content review. To insure that the items (and the dimensions on which each item was to be evaluated) in the Prioritization Survey were presented in terms meaningful to the wide variety of Army personnel in the survey population, the proposed items and rating dimensions were reviewed by subject matter experts (SMEs) at the Army Research Institute (ARI) and at the Directorate of Civilian Personnel (DCP), and by members of the Special Advisory Group (SAG) for the project.¹⁶ Another objective for this review was to insure that the items covered all of the topics presented in the *Roadmap*.

Validation. Although time constraints did not permit a pilot testing of the questionnaire, follow-up telephone interviews were conducted with a sample of 16 respondents to determine whether or not the respondents in general interpreted the items and rating dimensions as intended. Specifically, the respondents were asked whether or not they had any difficulty understanding the items or rating dimensions. No interviewee expressed any such difficulty. In addition, the individuals contacted were asked to comment in more depth on several items specified by the interviewer. The purpose of this inquiry was to determine whether or not the more specific issues which each of the broad areas was intended to encompass were consistent with the understanding of the respondent.

Although no serious inconsistencies were revealed, there was some evidence that at least some respondents were confused by the wording of the third item, "Making sure that candidates who are selected actually get hired."¹⁷

Survey Schedule

The survey materials were distributed by DCP on 12 June 1987, with a request that they be returned by 14 July 1987. Sixty-seven of the 102 questionnaires sent out were returned by that date. Telephone calls reminding nonrespondents that the survey materials were past due were made by DCP and ARI between 15 July and 21 July, resulting in 14 additional questionnaires being returned before the data analysis began on 24 July. One additional questionnaire was received on 29 July, but it was not included in the analysis.

¹⁶The latter group consisted of the same individuals who comprised the Study Advisory Group for the *Roadmap* study.

¹⁷See the section below entitled "Follow-Up Interviews: Interview Results" for empirical evidence that seems to support this contention.

Survey Respondents

DCP and the SAG initially identified 102 individuals for the survey population. Three responses were received from individuals who were judged (by DCP) to be acceptable substitutes for specified individuals in the original population. In addition, two others who were not included on the original list sent in questionnaires but were judged (by DCP) to be suitable members of the target population, although it was not apparent for whom they were responding. This brought the new survey population total to 104.

Follow-Up Interviews

Selection of interview sample. Of the 81 respondents, 67 indicated a willingness to participate in follow-up interviews. Three factors were used to select individuals for these interviews: (a) whether a respondent wrote a comment on his/her questionnaire that either was unclear or was particularly interesting; (b) whether responses in Section 1 of the questionnaire seemed to be inconsistent with those in Section 2; and (c) to insure that all relevant groups (i.e., military and civilian, managers and personnelists, staff and field, *Roadmap* participants and nonparticipants, and installations in the continental United States and overseas) were represented in the sample. The first two criteria were judged individually and resulted in 10 individuals being identified for the interviews. The characteristics of these 10 people were noted, and additional questionnaires were randomly drawn until all groups were represented by at least two people. This second step resulted in the addition of 12 individuals, bringing the total sample selected for the follow-up interview to 22.

Interview process. During the course of the three weeks allotted for the interviews (between 24 July and 14 August), attempts were made to contact all 22 individuals. Sixteen interviews were eventually completed, lasting an average of 41 minutes each. The text of that interview is contained in Appendix C-1. The interviewer took detailed notes during the course of the conversation, and these notes were evaluated by the researchers.

Interview results. Most of the persons interviewed had little, if any, familiarity with the *Roadmap* final report. Their own perceptions were that this lack of familiarity did not cause any difficulty in understanding the issues in the Prioritization Survey. An examination of the remarks made in response to the open-ended questions about specific research areas seemed to support these perceptions. For the most part, the interviewees discussed specific issues that were consistent with those addressed in the research questions in Appendix A of Clark and Savell (in preparation).

A notable exception to this consistency was the third item on the questionnaire, "Making sure that candidates who are selected actually get hired." Three of the five persons who were asked to expand upon that issue made comments which indicated a lack of understanding of the item's intent. This view is supported by empirical evidence as well--23.8 percent of the nonstandard responses were accounted for by item Q3:

- 15.5 percent (11) of the nonresponses (left blank)
- 46.7 percent (21) of the "?" responses
- 15.4 percent (8) of the "NN" responses

The next closest item was Q5, which accounted for 1.7 percent of the nonstandard responses.

Construction and Use of Scales

Before manipulating the questionnaire data, the responses of each individual were standardized (i.e., converted to z-scores) to eliminate the possible response set of that individual as a factor in explaining results. All nonstandard responses were excluded in this standardization process. Each of the three rating dimensions included in the questionnaire (i.e., need-for-improvement, consequences-of-no-improvement, and likelihood-of-action) was used as an individual assessment of each of the 16 areas. In addition, a fourth scale, a composite, was calculated for each item by summing the standardized responses to the other three scales. This composite was used in two different ways:

1. For statistical comparisons of subsets of respondents, it was necessary to use only those observations that had computationally valid responses (i.e., "1", "2", "3", or "4") on all three original scales. These are termed "weighted" composite scores, since each component scale is based on the same number of observations.
2. For gross comparisons across items (e.g., Table 4 in the main body of this report), it was deemed advisable to use the unweighted composite scores, which are simply a sum of the mean z-scores of the component scales, each of which is based upon a different number of observations. This allows the maximum number of observations to enter into the computations.

Investigation of Group Differences

One of the first questions addressed in the data analysis was whether or not there were significant differences among any of the groups included in the population (i.e., military and civilian, managers and personnelists, staff and field, *Roadmap* participants and nonparticipants). If such differences existed, there would be implications for the subsequent analyses. Statistical comparisons of group responses were made in two ways:

1. First, possible differences in responses to individual items were considered. Although the raw data for this investigation is clearly ordinal, converting responses to z-scores made the use of parametric statistics mathematically valid (although an interpretation of results from parametric tests would be questionable). A series of t-tests was used as a *screening device* to determine, with maximum power, whether any differences merited closer inspection using nonparametric tests. Using a Bonferroni adjustment to hold the global alpha level to 5 percent, no such differences emerged. This is not surprising when one considers the large variability in responses that is evident in Tables C-1 through C-16, which contain summary statistics for each of the groups on each of the scales.

2. Next, differences in patterns of responses to the four different scales were analyzed using a nonparametric technique, Friedman's two-way analysis of variance. Table C-17 reports the Kendall's coefficients of concordance (Kendall's W) that emerged from those analyses. Again, no systematic differences were found.

Figures C-1 through C-4 depict graphically the comparisons that were made for each of the groups on each of the items on the composite scale. In looking at these figures, one should focus on the *pairs* of bars that appear for each questionnaire item in a given figure. Keep in mind that statistically reliable differences in responses would be indicated if one of the two vertical bars in a pair did not overlap (on the Adjusted Score scale) with the other bar. Since this is not the case for any of the items in any of the groups, one can conclude that there are no systematic differences among groups on responses to the 16 items on the composite scale. This was also the case on the other scales.

Analyses of Combined Groups

Response patterns. Having eliminated group membership as an explanatory variable, all subsequent analyses were performed using the aggregate data set of 81 responses. Tables C-18 through C-21 present the summary statistics for the combined data on each of the four scales. Figure C-5 through C-8 graphically depict the mean scores for each item on each scale. Note that the survey participants tended to respond positively to the need-for-improvement dimension (Figure C-6) and negatively to the likelihood-of-action dimension (Figure C-8), with the consequences-of-no-improvement dimension (Figure C-7) being in between. Of course, positive and negative responses calculated for the composite dimension (Figure C-5) tended to balance each other.

Scale comparisons. A question of interest is whether the scales represent separate constructs or not. If two scales represented very similar constructs, the pattern of responses on one scale would tend to be like those on the other. This question was approached using Friedman's two-way analysis of variance on all possible two-scale, three-scale, and four-scale comparisons (a total of 11 tests). Kendall's coefficient of concordance was used as the test statistic. Only three comparisons were not significantly different at a global alpha level of 5 percent: each of the original three scales with the composite scale (Kendall's W values of 0.250, 0.250, and 0.141). This is not surprising, considering the inherent lack of independence of these pairs. All other tests supported the hypothesis that the scales are indeed different, with values of Kendall's W ranging from 1.00 (for the three pairwise comparisons among the original scales) to 0.438 (for the following three-scale comparison: composite, need-for-improvement, and consequences-of-no-improvement).

Grouping of items. Once the research areas were prioritized, it was desirable to group them into fewer than 16 distinct entities, so that gross generalizations could be made. Tukey's honestly significant difference (HSD) method, a post hoc technique based on the studentized range statistic, was selected for this purpose. The Tukey HSD approach resulted in seven subgroups of items, and a visual inspection of the groupings led to the three groups represented in Figure C-9. The four items in the top group have adjusted z-scores that are reliably higher than those in the middle or bottom groups, and the seven items in the middle group have scores that are reliably higher than the five items in the bottom group.

Table C-1

Group Comparisons of Weighted Composite Scores: Managers
Versus Personnelists

Weighted composite score						
	Manager			Personnelist		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	49	.767	1.644	19	1.215	1.530
Q2	47	.071	1.626	20	.166	1.625
Q3	38	-.511	2.043	17	-.547	2.989
Q4	49	1.285	1.366	18	1.850	1.398
Q5	49	.298	1.751	18	.187	1.774
Q6	48	-.657	1.714	19	-.558	2.007
Q7	49	-.433	1.630	18	.025	1.443
Q8	51	.376	1.878	19	.014	1.795
Q9	48	1.125	1.411	19	.839	1.588
Q10	50	.949	1.461	18	1.253	1.487
Q11	51	.304	1.396	19	-.315	1.508
Q12	49	.050	1.915	19	.140	2.043
Q13	50	.011	1.985	20	-.082	1.868
Q14	49	-1.120	1.806	19	-1.902	2.249
Q15	49	-.845	1.941	20	-.766	1.707
Q16	50	-1.052	1.916	19	-1.137	1.912

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

Composite scores are based only on those respondents that entered a "1", "2", "3", or "4" for all three dimensions on an item.

High scores reflect high overall rankings; low scores reflect low overall rankings.

Table C-2

Group Comparisons of Need-for-Improvement Scores: Managers
Versus Personnelists

How valuable would it be to the Army to improve things in this area?						
Manager				Personnelist		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	52	.964	.666	21	.957	.502
Q2	52	.545	.750	21	.329	.713
Q3	47	-.120	1.069	19	-.257	1.242
Q4	52	.845	.678	20	.644	.936
Q5	51	.801	.742	20	.692	.785
Q6	52	.066	.901	21	.040	.720
Q7	53	.276	.773	21	.227	.733
Q8	52	.645	.799	21	.353	.945
Q9	53	.731	.685	21	.677	.615
Q10	53	.757	.628	20	.779	.838
Q11	52	.568	.648	21	.406	.713
Q12	52	.484	.849	21	.473	.985
Q13	52	.411	.890	21	.458	.935
Q14	52	-.032	.844	21	-.423	1.072
Q15	52	-.140	.858	21	.022	.745
Q16	52	.037	.807	21	-.253	.877

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate much value; low values indicate little value.

Table C-3

Group Comparisons of Consequences-of-No-Improvement Scores:
Managers Versus Personnelists

How serious are the consequences for the Army of not improving things in this area?						
Manager				Personnelist		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	52	.540	.736	21	.765	.647
Q2	52	.093	.764	21	.346	.708
Q3	47	-.338	1.102	19	-.228	1.299
Q4	52	.638	.645	20	.664	.885
Q5	51	.557	.838	20	.425	.896
Q6	52	-.096	.824	21	-.048	.820
Q7	52	-.183	.848	21	.079	.756
Q8	52	.379	.841	21	.265	.744
Q9	53	.397	.741	21	.619	.595
Q10	53	.386	.592	20	.589	.580
Q11	52	.329	.660	21	.161	.789
Q12	52	.187	.997	21	.285	.884
Q13	52	.250	.795	21	.247	1.012
Q14	52	-.100	.779	21	-.605	.894
Q15	52	-.132	.743	21	-.076	.899
Q16	52	-.201	.847	21	-.345	.804

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate serious consequences; low scores indicate lack of serious consequences.

Table C-4

Group Comparisons of Likelihood-of-Action Scores: Managers
Versus Personnelists

If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?						
Manager				Personnelist		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	49	-.708	.939	19	-.480	1.022
Q2	47	-.610	.868	20	-.474	.846
Q3	39	-.472	.859	17	-.444	.979
Q4	49	-.268	.910	18	.096	.852
Q5	49	-1.144	1.142	18	-.892	.972
Q6	48	-.726	.810	19	-.559	1.014
Q7	50	-.575	.793	18	-.340	.849
Q8	51	-.613	.979	19	-.644	.870
Q9	48	-.155	.791	19	-.495	.832
Q10	50	-.246	.946	18	-.162	.850
Q11	51	-.622	.720	19	-.843	.629
Q12	49	-.744	1.026	19	-.491	1.007
Q13	50	-.721	.966	20	-.900	1.108
Q14	49	-1.012	.748	19	-1.068	.858
Q15	49	-.648	.853	20	-.633	.644
Q16	50	-.972	.936	19	-.670	.899

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate confidence that information would be used; low scores indicate lack of confidence that information would be used.

Table C-5

Group Comparisons of Weighted Composite Scores: Field Versus Staff Assignments

Weighted composite score						
	Field			Staff		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	41	.683	1.602	26	1.231	1.637
Q2	39	-.013	1.545	26	.220	1.784
Q3	33	-.490	2.228	21	-.631	2.616
Q4	40	1.530	1.331	26	1.281	1.509
Q5	41	.296	1.816	25	.250	1.690
Q6	40	-.766	1.700	26	-.385	1.949
Q7	40	-.215	1.525	26	-.409	1.708
Q8	43	.059	1.592	26	.623	2.231
Q9	39	1.025	1.463	27	1.084	1.500
Q10	41	1.007	1.539	26	1.079	1.390
Q11	43	.081	1.495	26	.289	1.363
Q12	41	.326	2.036	26	-.343	1.765
Q13	43	.122	1.880	26	-.187	2.072
Q14	41	-1.066	1.947	26	-1.845	1.903
Q15	42	-.553	1.892	26	-1.231	1.809
Q16	42	-1.123	1.967	26	-1.068	1.834

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

Composite scores are based only on those respondents that entered a "1", "2", "3", or "4" for all three dimensions on an item.

High scores reflect high overall rankings; low scores reflect low overall rankings.

Table C-6

Group Comparisons of Need-for-Improvement Scores: Field
Versus Staff Assignments

How valuable would it be to the Army to improve things in this area?						
Field				Staff		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	45	.934	.622	26	.999	.647
Q2	45	.551	.795	26	.355	.658
Q3	41	-.150	1.108	23	-.152	1.119
Q4	44	.806	.806	26	.815	.641
Q5	44	.736	.761	25	.803	.767
Q6	45	-.017	.863	26	.229	.831
Q7	45	.306	.702	27	.203	.873
Q8	45	.530	.682	26	.572	1.105
Q9	45	.644	.686	27	.841	.631
Q10	45	.805	.640	26	.702	.784
Q11	45	.516	.728	26	.565	.569
Q12	45	.590	.871	26	.242	.890
Q13	45	.528	.837	26	.313	.990
Q14	45	-.002	.882	26	-.368	.919
Q15	45	-.012	.835	26	-.285	.780
Q16	45	.002	.912	26	-.140	.674

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate much value; low values indicate little value.

Table C-7

Group Comparisons of Consequences-of-No-Improvement Scores:
Field Versus Staff Assignments

How serious are the consequences for the Army of not improving things in this area?						
Field				Staff		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	45	.522	.698	26	.708	.752
Q2	45	.149	.745	26	.161	.793
Q3	41	-.457	1.178	23	-.028	1.050
Q4	44	.571	.748	26	.814	.596
Q5	44	.548	.782	25	.463	.998
Q6	45	-.129	.809	26	.027	.856
Q7	44	-.104	.868	27	-.125	.799
Q8	45	.235	.841	26	.478	.747
Q9	45	.376	.700	27	.588	.726
Q10	45	.485	.597	26	.353	.599
Q11	45	.235	.745	26	.378	.638
Q12	45	.262	.894	26	.065	1.075
Q13	45	.219	.767	26	.356	1.006
Q14	45	-.220	.784	26	-.274	.888
Q15	45	-.026	.774	26	-.285	.820
Q16	45	-.242	.911	26	-.268	.681

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate serious consequences; low scores indicate lack of serious consequences.

Table C-8

Group Comparisons of Likelihood-of-Action Scores: Field Versus Staff Assignments

If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?						
Field				Staff		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	41	-.737	.906	26	-.476	1.050
Q2	39	-.755	.773	26	-.296	.925
Q3	34	-.435	.885	21	-.474	.921
Q4	40	-.055	.900	26	-.347	.913
Q5	41	-1.082	1.197	25	-1.016	.923
Q6	40	-.689	.830	26	-.640	.949
Q7	41	-.460	.843	26	-.568	.767
Q8	43	-.725	.987	26	-.427	.867
Q9	39	-.161	.830	27	-.346	.778
Q10	41	-.356	.881	26	.023	.933
Q11	43	-.686	.704	26	-.654	.709
Q12	41	-.674	1.109	26	-.650	.899
Q13	43	-.711	.966	26	-.856	1.090
Q14	41	-.912	.783	26	-1.203	.754
Q15	42	-.618	.818	26	-.662	.775
Q16	42	-1.022	.960	26	-.660	.865

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate confidence that information would be used; low scores indicate lack of confidence that information would be used.

Table C-9

Group Comparisons of Weighted Composite Scores: *Roadmap*
Participants Versus Nonparticipants

Weighted composite score						
<i>Roadmap</i> Participant				<i>Roadmap</i> Nonparticipant		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	24	.642	1.289	44	1.028	1.765
Q2	24	-.081	1.965	43	.199	1.396
Q3	20	-1.302	2.857	35	-.077	1.904
Q4	26	1.090	1.710	41	1.657	1.105
Q5	24	.263	1.589	43	.271	1.844
Q6	25	-.743	1.715	42	-.561	1.846
Q7	23	-.342	1.700	44	-.293	1.540
Q8	26	.551	1.723	44	.116	1.922
Q9	24	1.286	1.546	43	.908	1.405
Q10	25	.959	1.241	43	1.070	1.590
Q11	26	-.235	1.502	44	.355	1.378
Q12	25	.640	1.374	43	-.253	2.145
Q13	26	.637	1.617	44	-.401	2.026
Q14	25	-1.542	1.997	43	-1.220	1.943
Q15	25	-.305	1.927	44	-1.116	1.783
Q16	25	-.832	1.951	44	-1.214	1.881

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

Composite scores are based only on those respondents that entered a "1", "2", "3", or "4" for all three dimensions on an item.

High scores reflect high overall rankings; low scores reflect low overall rankings.

Table C-10

Group Comparisons of Need-for-Improvement Scores: *Roadmap*
Participants Versus Nonparticipants

How valuable would it be to the Army to improve things in this area?						
<i>Roadmap</i> Participant				<i>Roadmap</i> Nonparticipant		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	27	.912	.613	46	.992	.629
Q2	27	.443	.794	46	.506	.716
Q3	25	-.473	1.313	41	.032	.939
Q4	27	.721	.807	45	.830	.732
Q5	26	.740	.753	45	.788	.757
Q6	27	.137	.866	46	.012	.844
Q7	27	.195	.696	47	.300	.795
Q8	27	.714	.545	46	.471	.977
Q9	27	.605	.655	47	.778	.665
Q10	27	.821	.663	46	.729	.704
Q11	27	.308	.707	46	.647	.614
Q12	27	.693	.701	46	.356	.959
Q13	27	.706	.702	46	.259	.963
Q14	27	-.080	.950	46	-.182	.919
Q15	27	.093	.912	46	-.202	.759
Q16	27	.110	.798	46	-.138	.846

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate much value; low values indicate little value.

Table C-11

Group Comparisons of Consequences-of-No-Improvement Scores:
Roadmap Participants Versus Nonparticipants

How serious are the consequences for the Army of not improving things in this area?						
Roadmap Participant				Roadmap Nonparticipant		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	27	.452	.638	46	.695	.748
Q2	27	.010	.833	46	.257	.694
Q3	25	-.643	1.346	41	-.102	.979
Q4	27	.561	.692	45	.695	.728
Q5	26	.413	.902	45	.581	.823
Q6	27	-.167	.762	46	-.033	.852
Q7	26	-.168	.986	47	-.074	.733
Q8	27	.445	.791	46	.288	.825
Q9	27	.424	.786	47	.481	.663
Q10	27	.353	.440	46	.494	.664
Q11	27	.112	.790	46	.380	.626
Q12	27	.340	.809	46	.142	1.041
Q13	27	.483	.569	46	.112	.966
Q14	27	-.361	.800	46	-.177	.863
Q15	27	-.037	.781	46	-.162	.792
Q16	27	-.263	.901	46	-.230	.799

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate serious consequences; low scores indicate lack of serious consequences.

Table C-12

Group Comparisons of Likelihood-of-Action Scores: *Roadmap*
Participants Versus Nonparticipants

If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?

<i>Roadmap Participant</i>				<i>Roadmap Nonparticipant</i>			
	N	Mean	Std. Dev.		N	Mean	Std. Dev.
Q1	24	-.643	.987		44	-.645	.957
Q2	24	-.541	.997		43	-.585	.781
Q3	21	-.644	.978		35	-.356	.826
Q4	26	-.198	.859		41	-.152	.939
Q5	24	-1.044	.951		43	-1.095	1.181
Q6	25	-.745	.868		42	-.639	.876
Q7	24	-.468	.908		44	-.537	.759
Q8	26	-.543	1.078		44	-.668	.867
Q9	24	.075	.838		43	-.433	.745
Q10	25	-.327	.942		43	-.164	.906
Q11	26	-.692	.605		44	-.675	.756
Q12	25	-.570	.996		43	-.734	1.041
Q13	26	-.620	1.075		44	-.862	.960
Q14	25	-1.178	.758		43	-.941	.779
Q15	25	-.477	.816		44	-.738	.774
Q16	25	-.846	.982		44	-.913	.909

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate confidence that information would be used; low scores indicate lack of confidence that information would be used.

Table C-13

Group Comparisons of Weighted Composite Scores: Civilian
Versus Military Respondents

Weighted composite score						
	Civilian			Military		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	42	.990	1.449	26	.734	1.869
Q2	43	.047	1.661	24	.193	1.556
Q3	32	-.539	2.552	23	-.499	2.084
Q4	42	1.361	1.511	25	1.565	1.169
Q5	42	.187	1.435	25	.405	2.196
Q6	43	-.861	1.658	24	-.213	1.966
Q7	43	-.247	1.744	24	-.422	1.276
Q8	44	.396	1.977	26	.077	1.630
Q9	41	.954	1.281	26	1.186	1.715
Q10	42	.951	1.345	26	1.156	1.655
Q11	44	.064	1.512	26	.257	1.340
Q12	43	.505	1.648	25	-.664	2.194
Q13	44	.008	1.885	26	-.056	2.066
Q14	43	-1.486	2.111	25	-1.085	1.660
Q15	43	-1.052	2.036	26	-.443	1.500
Q16	43	-.793	2.010	26	-1.544	1.638

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

Composite scores are based only on those respondents that entered a "1", "2", "3", or "4" for all three dimensions on an item.

High scores reflect high overall rankings; low scores reflect low overall rankings.

Table C-14

Group Comparisons of Need-for-Improvement Scores: Civilian
Versus Military Respondents

How valuable would it be to the Army to improve things in this area?						
Civilian				Military		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	46	1.015	.568	27	.873	.702
Q2	46	.476	.734	27	.494	.766
Q3	40	-.226	1.128	26	-.056	1.105
Q4	45	.703	.832	27	.934	.600
Q5	45	.713	.604	26	.870	.958
Q6	46	.055	.849	27	.064	.862
Q7	46	.290	.785	28	.216	.721
Q8	46	.566	.862	27	.552	.837
Q9	46	.647	.637	28	.826	.699
Q10	45	.678	.567	28	.899	.836
Q11	46	.498	.612	27	.561	.760
Q12	46	.636	.756	27	.216	1.027
Q13	46	.472	.835	27	.343	1.005
Q14	46	-.227	.937	27	-.003	.905
Q15	46	-.172	.838	27	.041	.801
Q16	46	.010	.891	27	-.142	.726

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate much value; low values indicate little value.

Table C-15

Group Comparisons of Consequences-of-No-Improvement Scores:
Civilian Versus Military Respondents

How serious are the consequences for the Army of not improving things in this area?						
Civilian				Military		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	46	.706	.698	27	.433	.723
Q2	46	.262	.678	27	.003	.853
Q3	40	-.295	1.115	26	-.325	1.231
Q4	45	.690	.740	27	.570	.673
Q5	45	.544	.751	26	.477	1.013
Q6	46	-.091	.786	27	-.068	.883
Q7	46	-.019	.799	27	-.260	.866
Q8	46	.505	.818	27	.075	.736
Q9	46	.458	.655	28	.464	.794
Q10	45	.470	.576	28	.395	.625
Q11	46	.301	.748	27	.246	.616
Q12	46	.373	.912	27	-.052	1.000
Q13	46	.324	.842	27	.122	.879
Q14	46	-.337	.858	27	-.088	.798
Q15	46	-.210	.840	27	.045	.667
Q16	46	-.118	.841	27	-.453	.787

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate serious consequences; low scores indicate lack of serious consequences.

Table C-16

Group Comparisons of Likelihood-of-Action Scores: Civilian
Versus Military Respondents

If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?						
Civilian				Military		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Q1	42	-.685	.922	26	-.578	1.035
Q2	43	-.669	.842	24	-.390	.873
Q3	32	-.419	.927	24	-.523	.850
Q4	42	-.213	.896	25	-.097	.929
Q5	42	-1.145	.937	25	-.961	1.337
Q6	43	-.834	.856	24	-.400	.835
Q7	43	-.540	.789	25	-.466	.856
Q8	44	-.714	1.042	26	-.465	.746
Q9	41	-.299	.790	26	-.177	.853
Q10	42	-.232	.840	26	-.211	1.043
Q11	44	-.728	.687	26	-.603	.726
Q12	43	-.521	.899	25	-.935	1.173
Q13	44	-.897	1.052	26	-.560	.895
Q14	43	-1.067	.861	25	-.960	.607
Q15	43	-.698	.855	26	-.554	.687
Q16	43	-.814	.967	26	-1.012	.867

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate confidence that information would be used; low scores indicate lack of confidence that information would be used.

Table C-17

Comparison of Group Response Patterns on Rating Scales: Table of Kendall's Coefficients of Concordance

Group comparison	Scale			
	Need for improvement	Consequences of no improvement	Likelihood of action	Weighted composite
Civilian versus military	0.063	0.250	0.391	0.063
Staff versus field	0.016	0.016	0.016	0.000
Personnelist versus manager	0.391	0.063	0.141	0.000
<i>Roadmap</i> participant versus nonparticipant	0.000	0.250	0.063	0.063

Notes.

Probabilities of observing the above values for Kendall's coefficient of concordance (Kendall's W) are greater than 5 percent under the true null hypothesis that the responses came from the same population (with Bonferroni adjustment to maintain the Type I familywise error rate at 5 percent).

Composite scores are "weighted" in that they were calculated by summing the mean z-scores for the three rating scales that appeared on the Prioritization Survey. Since only those observations with valid data on all three scales were used, the number of observations within each row is equal (across columns).

Table C-18

Weighted Composite Scores: Aggregate Summary Statistics

Weighted composite score			
	N	Mean	Std. Dev.
Q1	74	.988	1.635
Q2	73	.140	1.597
Q3	59	-.460	2.298
Q4	73	1.361	1.422
Q5	73	.179	1.779
Q6	71	-.634	1.758
Q7	72	-.363	1.561
Q8	76	.300	1.794
Q9	73	1.075	1.436
Q10	74	.994	1.448
Q11	76	.085	1.451
Q12	74	-.022	1.930
Q13	76	-.049	1.917
Q14	74	-1.251	1.930
Q15	74	-.774	1.841
Q16	74	-1.017	1.891

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

Composite scores are based only on those respondents that entered a "1", "2", "3", or "4" for all three dimensions on an item.

High scores reflect high overall rankings; low scores reflect low overall rankings.

Table C-19

Need-for-Improvement Scores: Aggregate Summary Statistics

How valuable would it be to the Army to improve things in this area?			
	N	Mean	Std. Dev.
Q1	79	.972	.600
Q2	79	.481	.725
Q3	70	-.132	1.096
Q4	78	.794	.735
Q5	77	.749	.753
Q6	78	.059	.847
Q7	80	.221	.768
Q8	79	.601	.828
Q9	80	.743	.647
Q10	79	.774	.675
Q11	79	.489	.674
Q12	79	.471	.913
Q13	79	.447	.901
Q14	79	-.099	.920
Q15	78	-.052	.824
Q16	79	-.037	.827

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate much value; low values indicate little value.

Table C-20

Consequences-of-No-Improvement Scores: Aggregate Summary Statistics

How serious are the consequences for the
Army of not improving things in this area?

	N	Mean	Std. Dev.
Q1	79	.626	.706
Q2	79	.189	.739
Q3	70	-.252	1.147
Q4	78	.613	.734
Q5	77	.483	.869
Q6	78	-.104	.802
Q7	79	-.152	.833
Q8	79	.338	.791
Q9	80	.492	.703
Q10	79	.459	.603
Q11	79	.267	.696
Q12	79	.176	.960
Q13	79	.264	.841
Q14	79	-.223	.820
Q15	78	-.073	.787
Q16	79	-.218	.831

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate serious consequences; low scores indicate lack of serious consequences.

Table C-21

Likelihood-of-Action Scores: Aggregate Summary Statistics

If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?

	N	Mean	Std. Dev.
Q1	74	-.584	.983
Q2	73	-.549	.855
Q3	60	-.472	.873
Q4	73	-.203	.887
Q5	73	-1.098	1.066
Q6	71	-.691	.858
Q7	73	-.505	.799
Q8	76	-.634	.923
Q9	73	-.276	.810
Q10	74	-.286	.924
Q11	76	-.683	.690
Q12	74	-.715	1.021
Q13	76	-.837	1.025
Q14	74	-1.006	.769
Q15	74	-.682	.811
Q16	74	-.889	.953

Notes.

See Table 1 for specification of research areas.

Means are z-scores, normalized for each respondent.

High scores indicate confidence that information would be used; low scores indicate lack of confidence that information would be used.

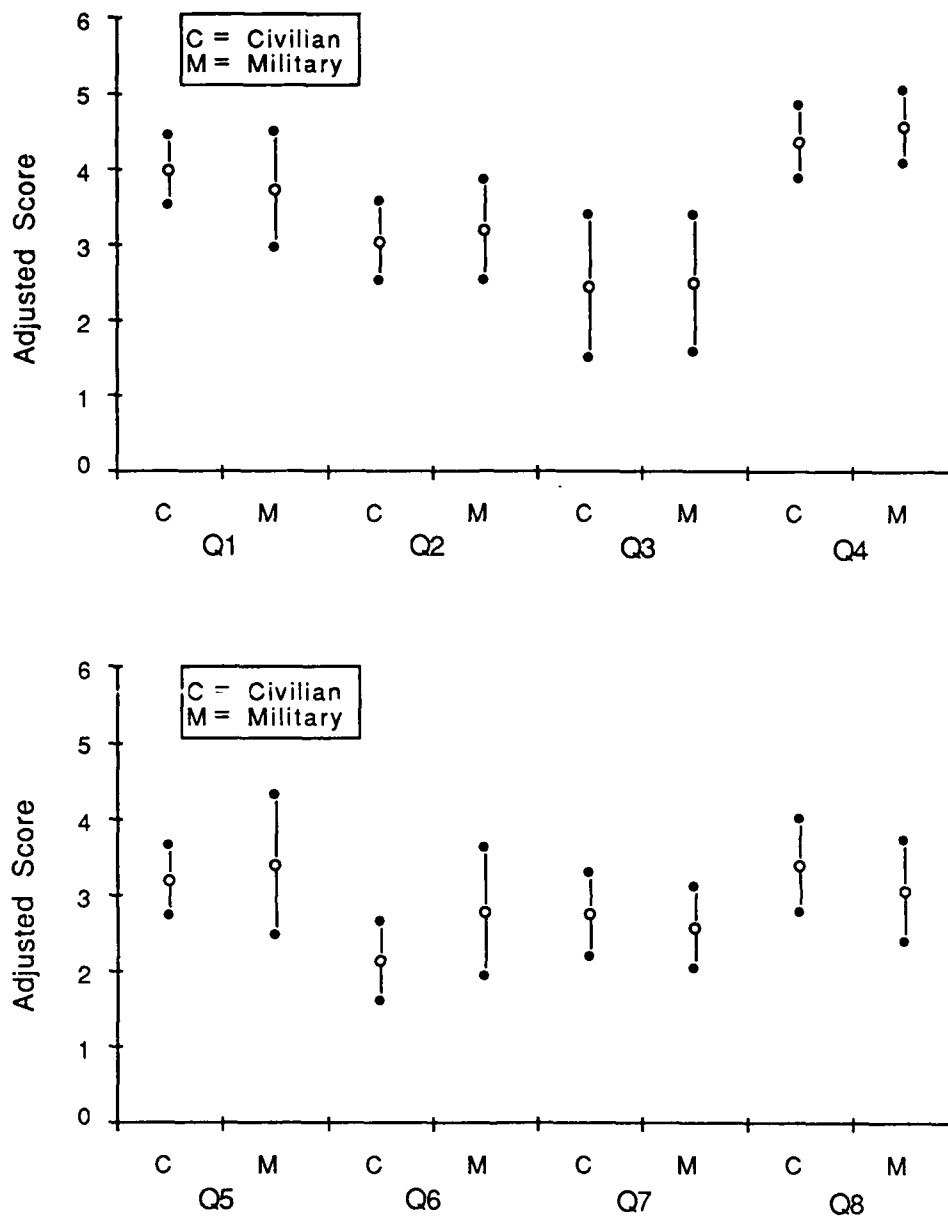
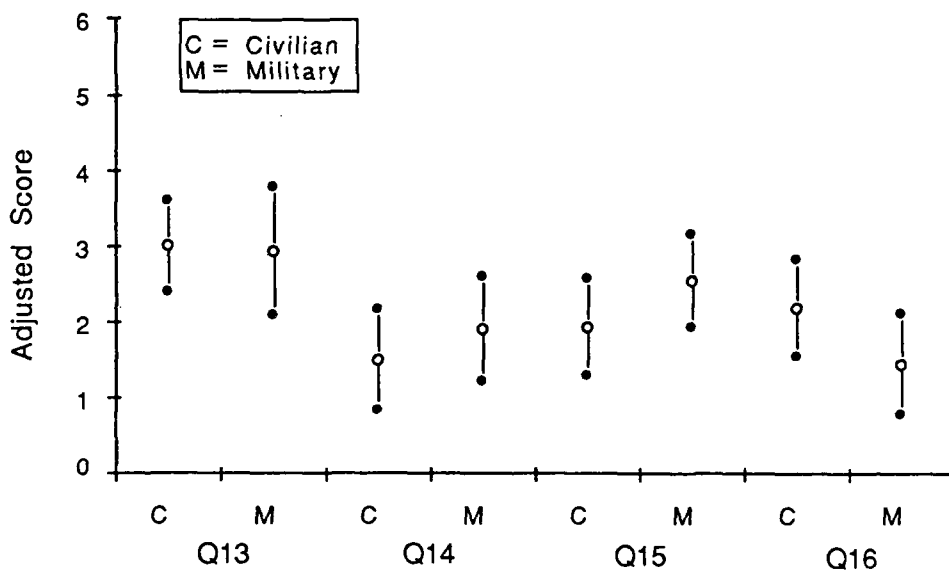
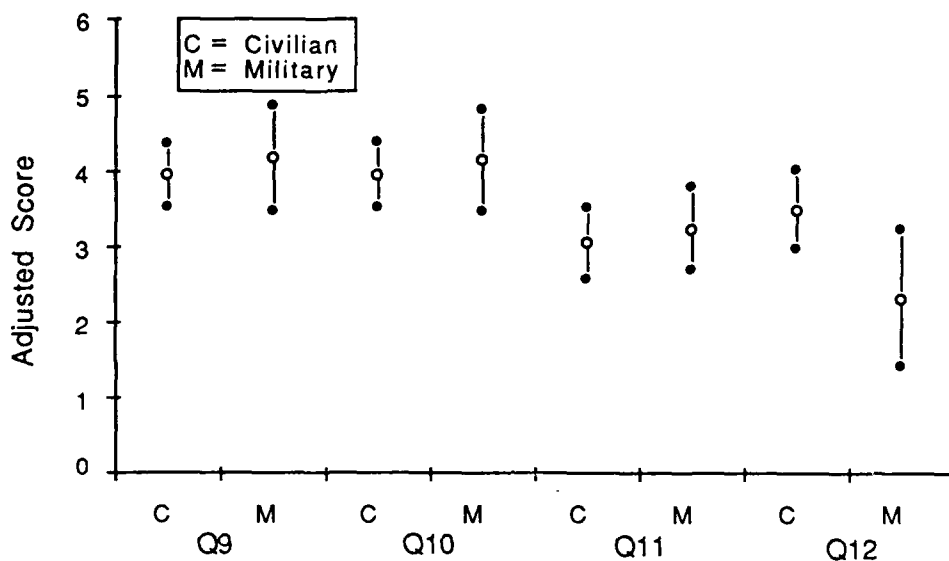


Figure C-1. Group comparisons of weighted composite scores: civilian versus military respondents.



Notes .

See Table 1 for specification of research areas.

The open circle represents the mean z-score for the group--increased by a constant of 3 to eliminate negative scores--and the filled circles represent the upper and lower bounds of 95% confidence intervals around that mean after applicable adjustments have been made.

Figure C-1 . (continued)

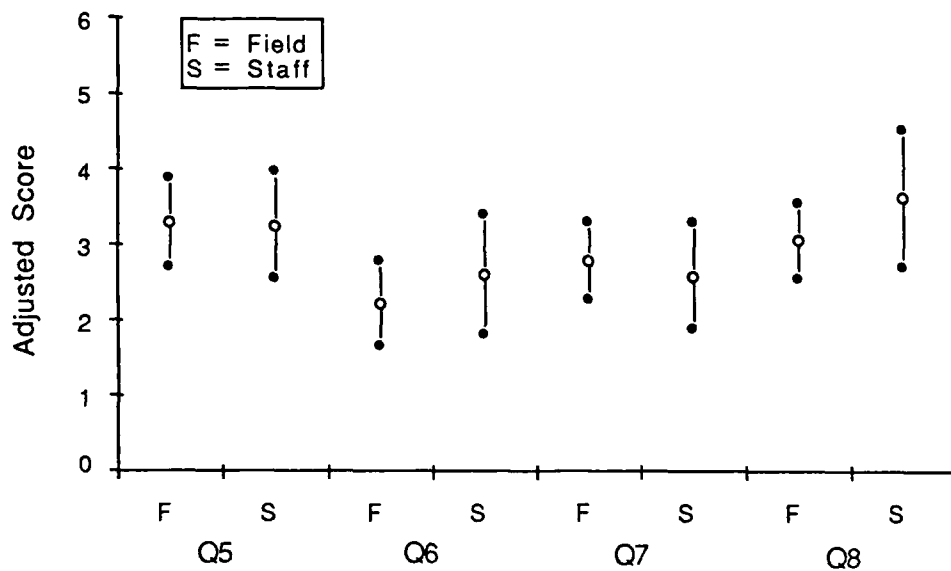
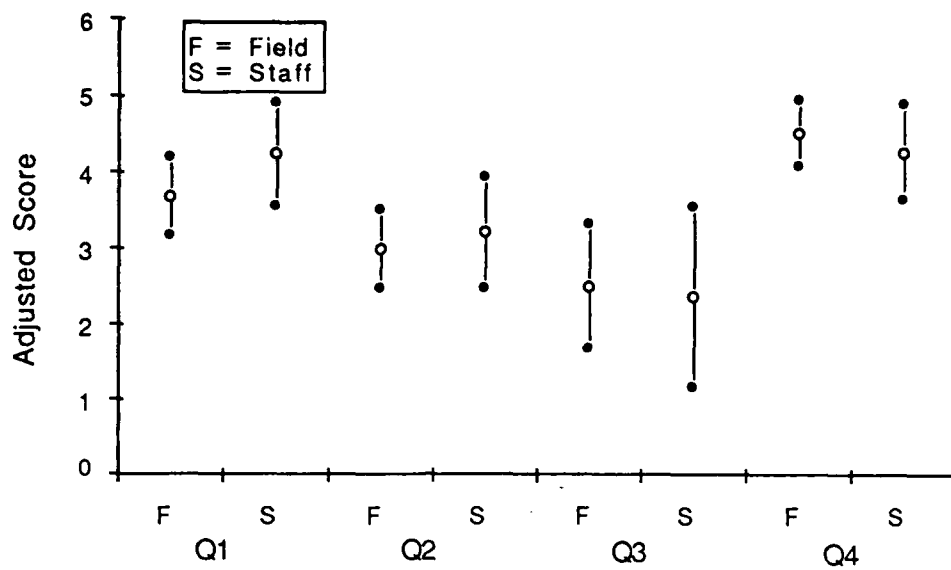
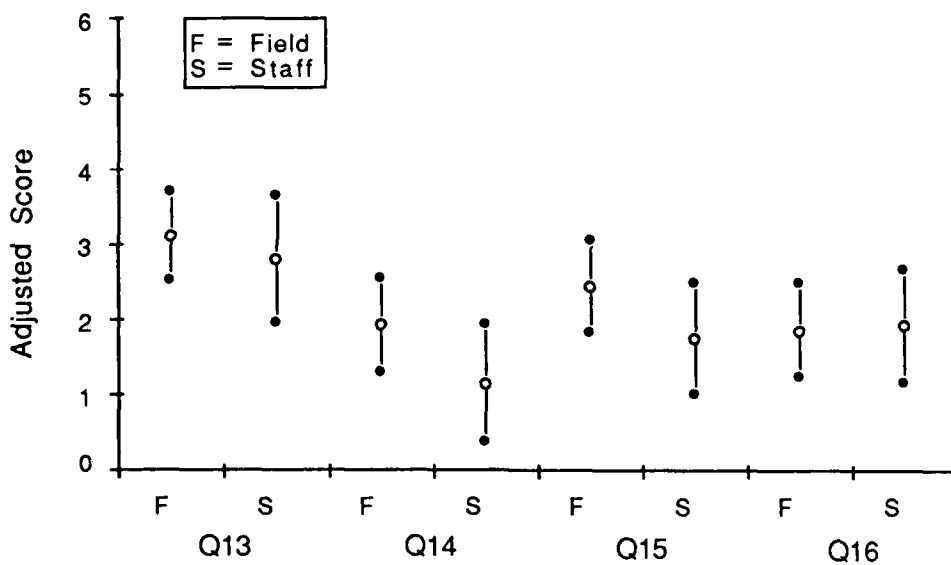
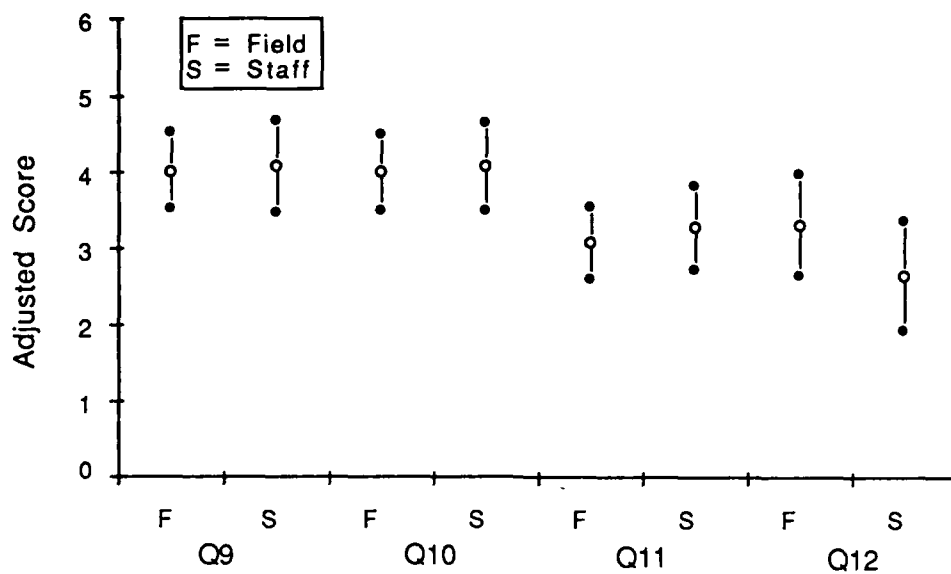


Figure C-2. Group comparisons of weighted composite scores: field versus staff assignments.



Notes .

See Table 1 for specification of research areas.

The open circle represents the mean z-score for the group--increased by a constant of 3 to eliminate negative scores--and the filled circles represent the upper and lower bounds of 95% confidence intervals around that mean after applicable adjustments have been made.

Figure C-2. (continued)

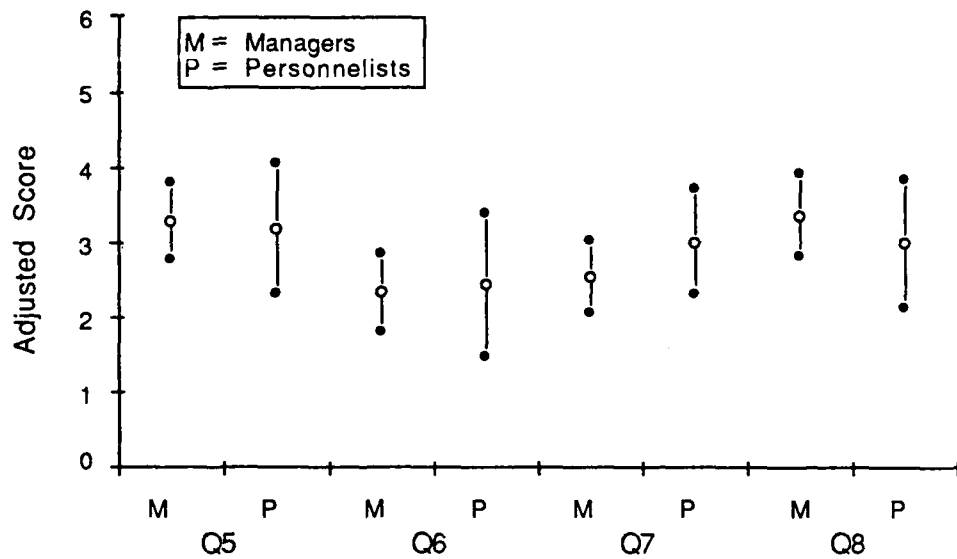
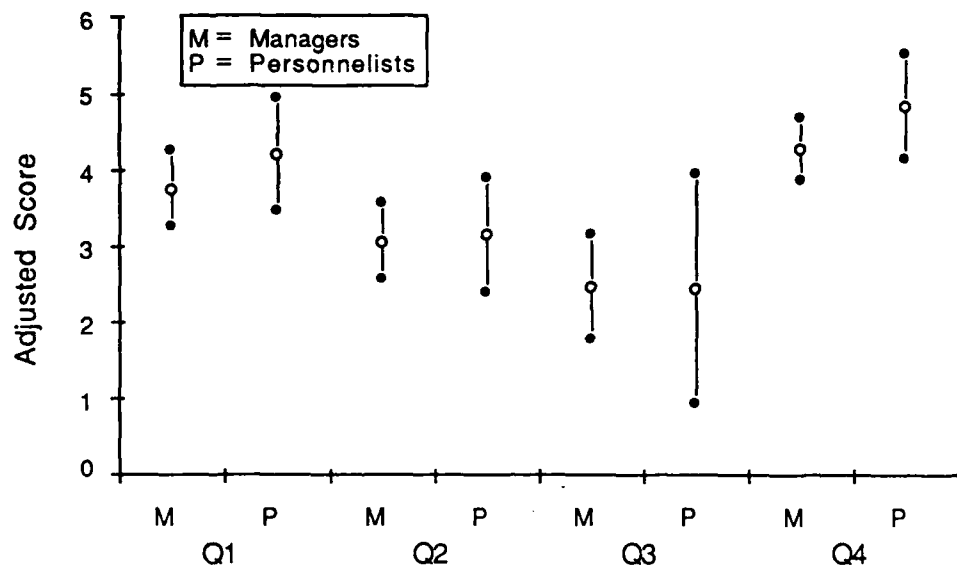
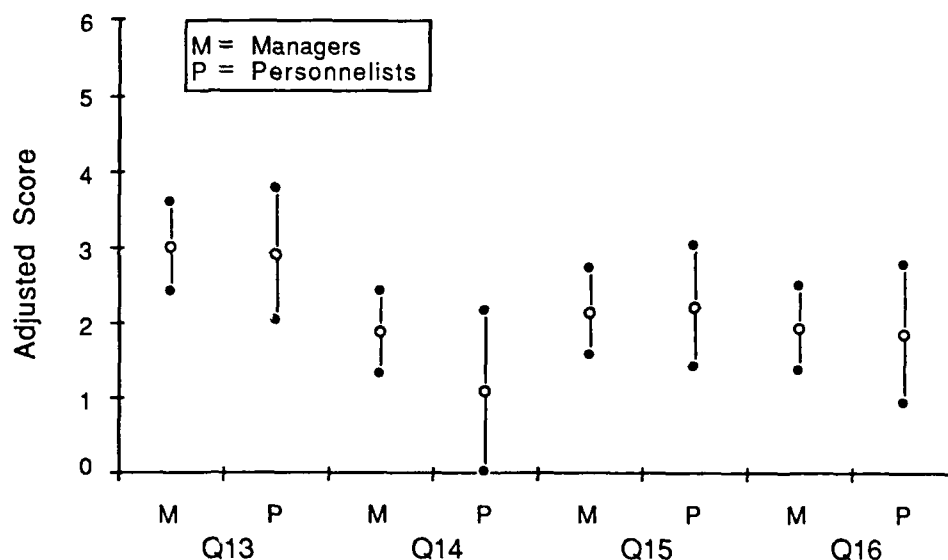
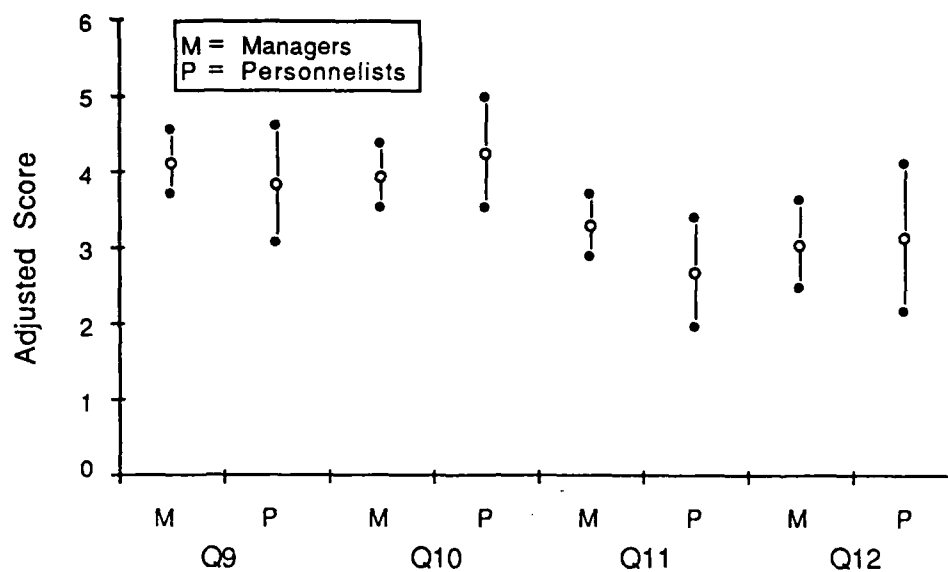


Figure C-3. Group comparisons of weighted composite scores: managers versus personnelists.



Notes .

See Table 1 for specification of research areas.

The open circle represents the mean z-score for the group--increased by a constant of 3 to eliminate negative scores--and the filled circles represent the upper and lower bounds of 95% confidence intervals around that mean after applicable adjustments have been made.

Figure C-3. (continued)

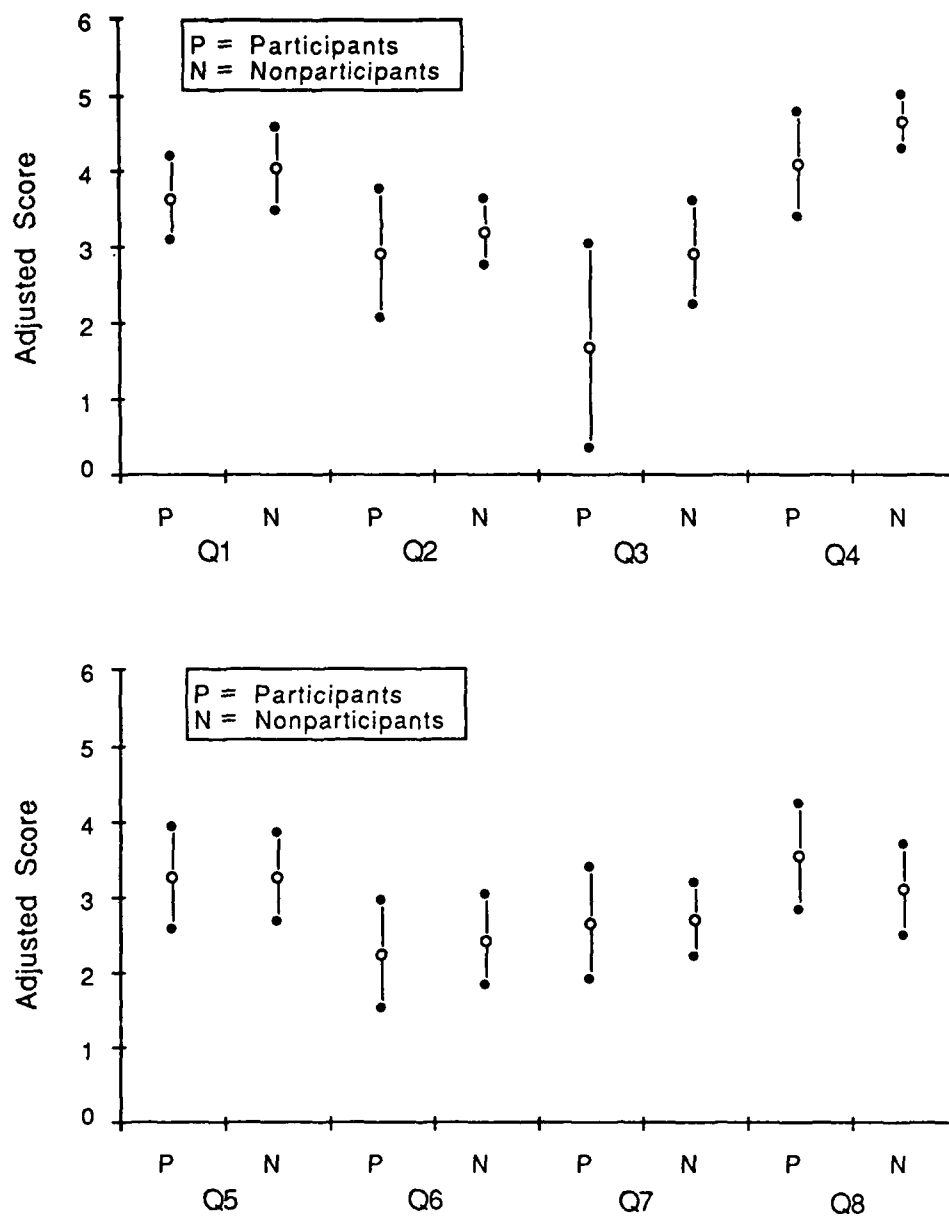
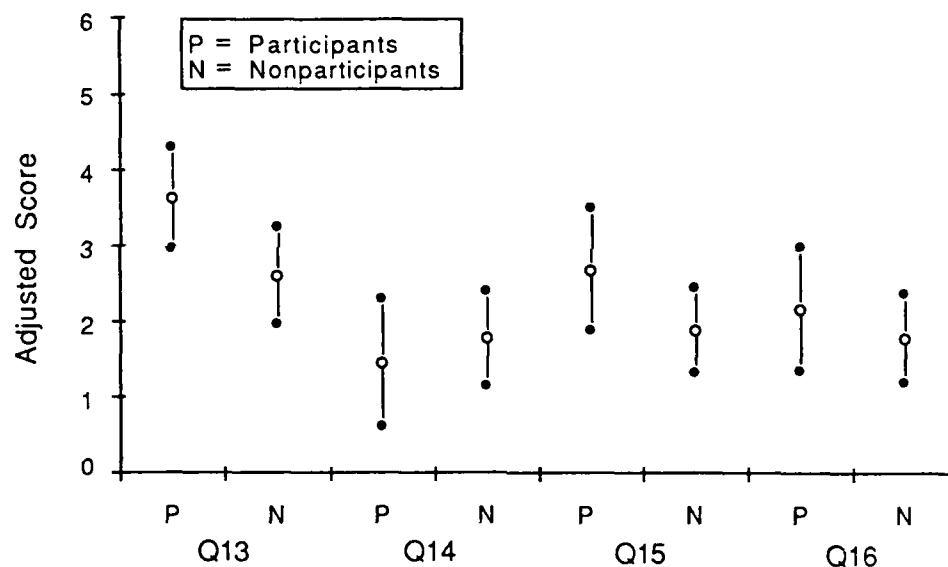
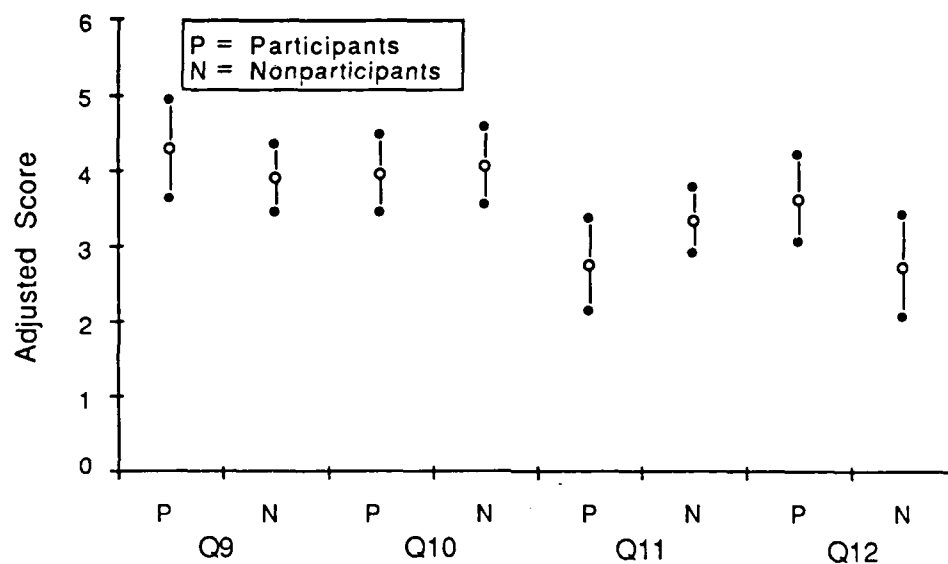


Figure C-4. Group comparisons of weighted composite scores: those who participated in Roadmap versus those who did not.

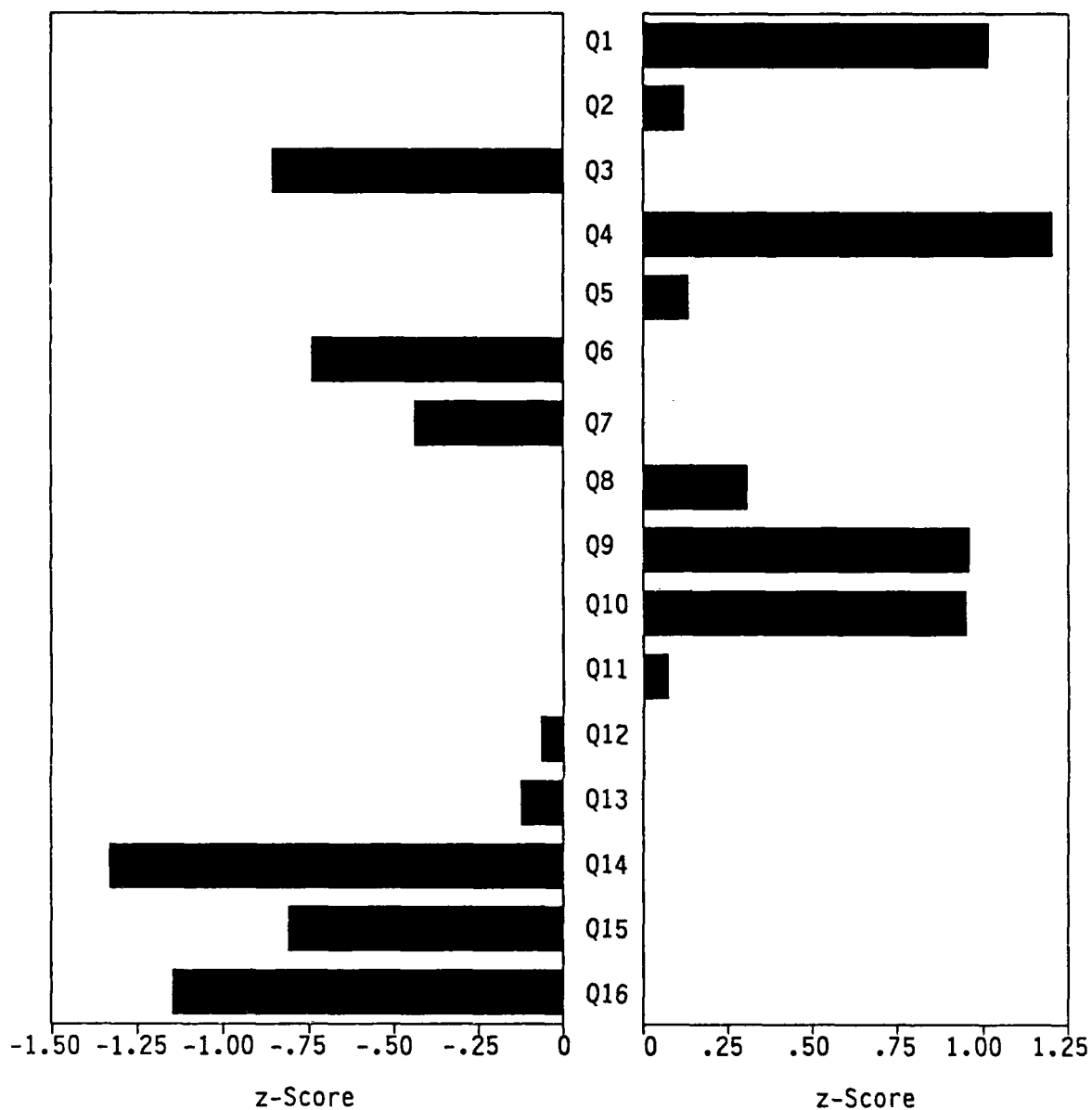


Notes .

See Table 1 for specification of research areas.

The open circle represents the mean z-score for the group--increased by a constant of 3 to eliminate negative scores--and the filled circles represent the upper and lower bounds of 95% confidence intervals around that mean after applicable adjustments have been made.

Figure C-4 . (continued)

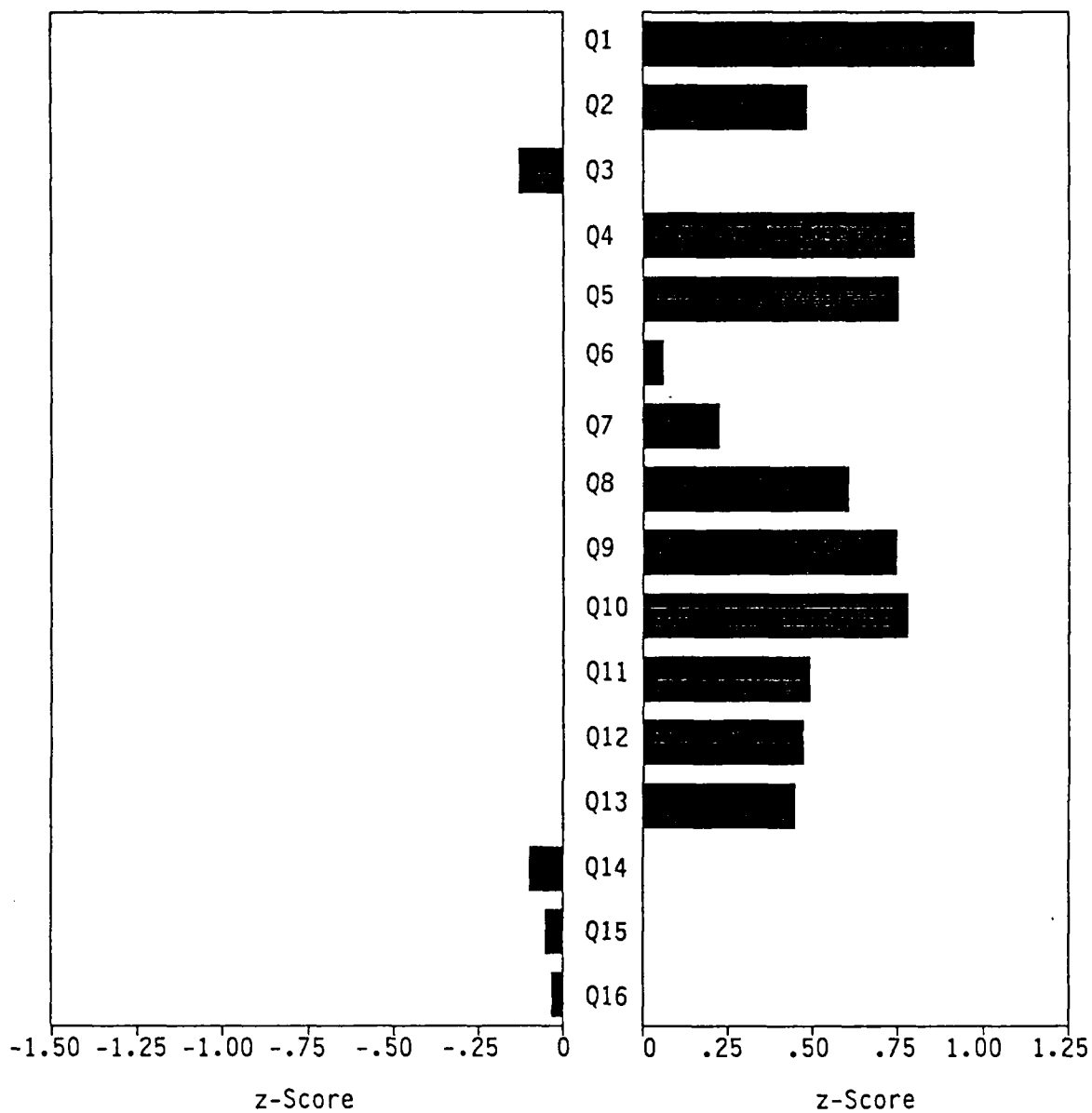


Notes.

See Table 1 for specification of research areas.

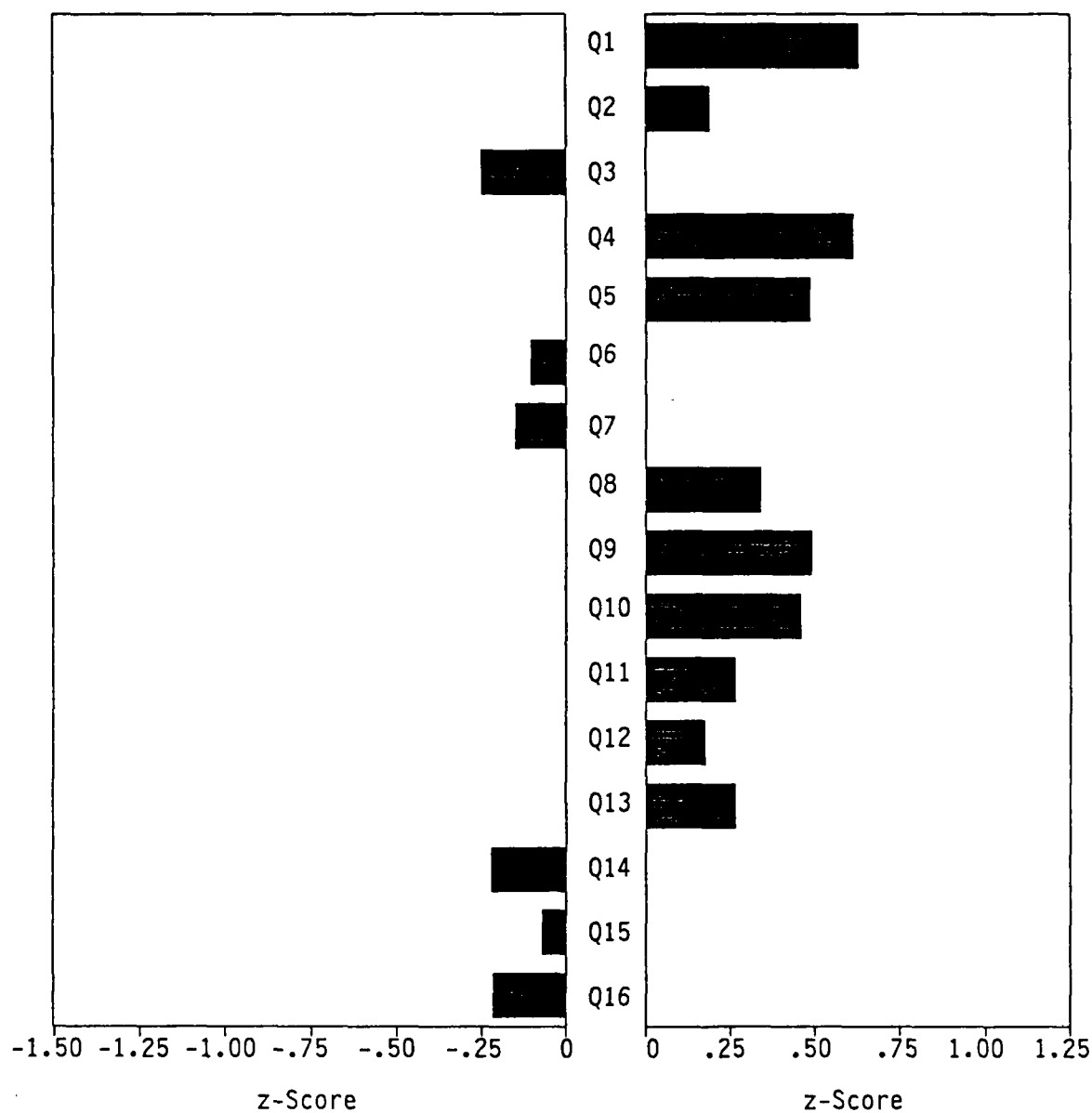
Composite scores are "unweighted" in that they were calculated by summing the mean z-scores (each of which is based on a different number of responses) for the three rating scales that appeared in the Prioritization Survey.

Figure C-5. Mean z-scores for Prioritization Survey items: unweighted composite.



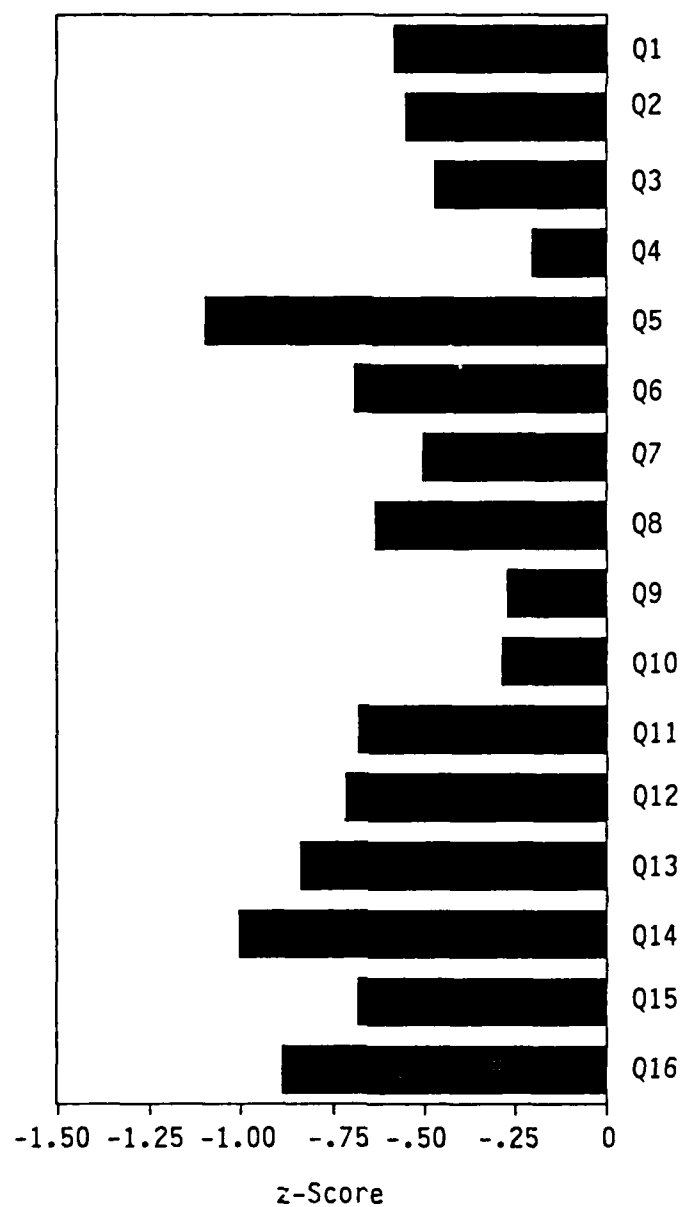
Note. See Table 1 for specification of research areas.

Figure C-6. Mean z-scores for Prioritization Survey items: How valuable would it be to the Army to improve things in this area?



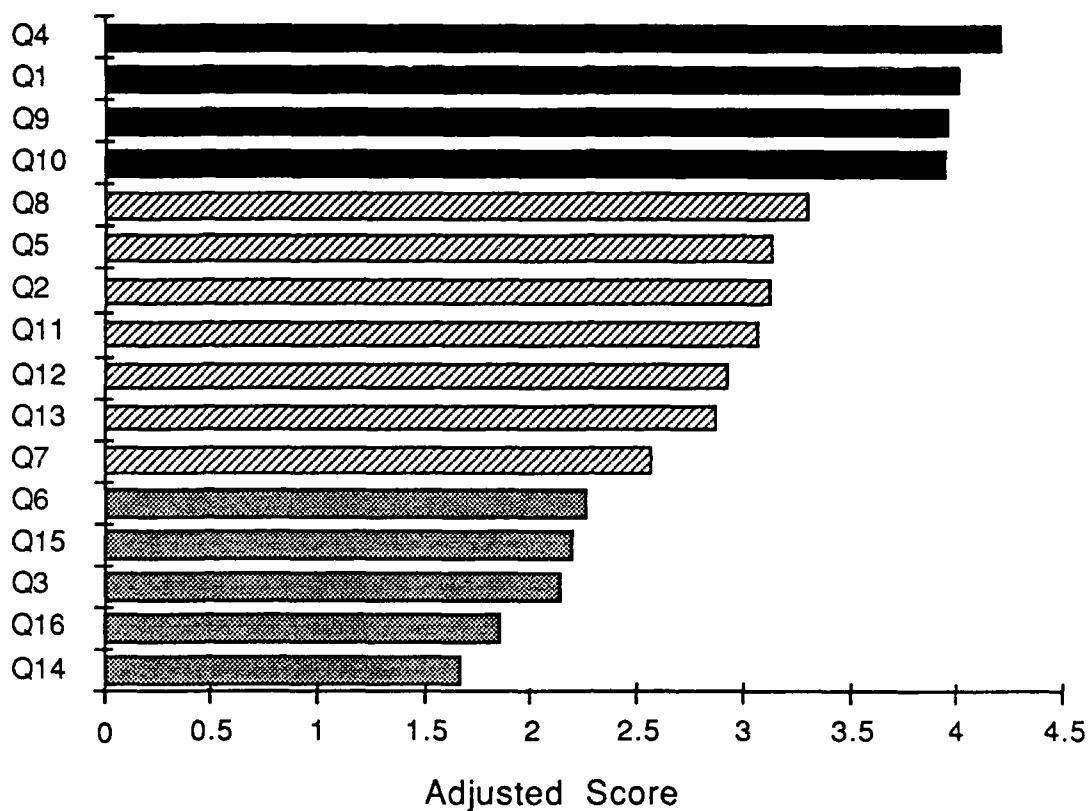
Note. See Table 1 for specification of research areas.

Figure C-7. Mean z-scores for Prioritization Survey items: How serious are the consequences for the Army of not improving things in this area?



Note. See Table 1 for specification of research areas.

Figure C-8. Mean z-scores for Prioritization Survey items: If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?



Notes.

Composite scores are "unweighted" in that they were calculated by summing the mean z-scores (each of which is based on a different number of responses) for the three rating scales that appeared in the Prioritization Survey.

Adjusted scores are mean z-scores plus 3.

Shaded areas separate the top, middle, and lowest priority topics as identified using the Tukey HSD procedure.

Figure C-9. Prioritization of research areas: unweighted composite scores.

APPENDIX C-1

TEXT OF FOLLOW-UP INTERVIEW¹⁸

My name is _____ and I am calling with regard to the Prioritization Survey distributed by the Directorate of Civilian Personnel in mid-June. When you filled out the questionnaire you indicated a willingness to participate in a telephone follow-up effort. That is why I am calling. Is it convenient for you to spend a few minutes talking to me now about the survey itself and about the Army's research needs in the area of civilian personnel?

The purpose of this interview is to ask you a few specific questions about the survey and to give you an opportunity to expand upon your views of the research needs related to managing Army civilian personnel.

1. According to my information, you were (or were not) interviewed in connection with the original "Roadmap" study. Is that correct?

("Army Strategic Plan for Civilian Personnel Management Research: A Roadmap for the Future," prepared for DCP by Caliber Associates, October, 1986)

Are you familiar with the final report that came out of that study?

2. Did you find it difficult to understand any of the issues that were addressed in the Prioritization Survey? If so, which one(s)?
3. I see from your questionnaire that the three areas in which you believe that a systematic research effort might most benefit the Army are the following: _____, _____, and _____.

(Read the items from the questionnaire corresponding to their responses to the three upper blanks in Section 2 of the questionnaire.)

Could you expand upon each of these--perhaps explaining your reasons for choosing these areas (and not choosing others), the specific types of research that you would hope to see undertaken in addressing these issues, etc.?

(There is one main objective for this question: First, to determine whether or not the respondent understood the question as it was intended--i.e., whether or not he/she considers the same specific issues to be a part of this broader issue as outlined in the document, "Detailed Research Questions for Items in Prioritization Survey.")¹⁹

4. I also see from your questionnaire that the area in which you believe a systematic research effort might least benefit the Army is _____.

(Read the item from the questionnaire corresponding to their response to the lower blank in Section 2 of the questionnaire.)

Could you expand upon this too?

¹⁸Instructions to interviewer are in italics.

¹⁹This was an early draft of what is now Appendix A.

(The objective for asking this question is the same as that outlined in #3.)

5. Would you like to share any further comments about the "Roadmap" study, the Prioritization Survey, or the research needs relating to the Army's civilian personnel function?

Thank you very much for your cooperation.